Roll No……

GL BAJAJ Institute of Management & Research Greater Noida
FIND YOUR SPARK

Plot No. 2, Knowledge Park-III, Greater Noida (U.P.) –201306

POST GRADUATE DIPLOMA IN MANAGEMENT (2025-27)
END TERM EXAMINATION (TERM-III)

Subject Name: **Machine Learning for Business Management** Time: **02.00 hrs**
Sub. Code: **PGIT32** Max Marks: **40**

Note: All questions are compulsory. Section A carries 12 marks: 6 questions of 2 marks each, Section B carries 18 marks having 3 questions (with internal choice question in each) of 6 marks each and Section C carries 10 marks one Case Study having 2 questions of 5 marks each.
***Upload your Python (.py) file to the server using the provided submission portal.**

Kindly write the all the course outcomes as per your TLEP in the box given below:

COs	Statement of Course Outcomes Students shall be able to	Bloom's Taxonomy
CO-1	Describe the business needs ML in order to create competitive advantages and add real business value in solving business problems. (L3)	Apply: L-3
CO-2	Demonstrate the ML techniques and their application in business context. (L3)	Apply: L-3
CO-3	Apply and compare interesting and useful patterns from the explosive Volume of data by application of supervised and unsupervised techniques. (L3, L4, L5)	Apply: L-3 Analyze: L-4 Evaluate: L-5
CO-4	Develop an appreciation for what is involved in learning from data and explain Integration of theory & application in various functional areas through interdisciplinary approach. (L4)	Analyze: L-4

SECTION - A

Attempt all questions. All questions are compulsory. **2×6 = 12 Marks**

Questions	CO	Bloom's Level
Q. 1: (A). Write Python code to load titanic dataset and display the last 10 rows. **Q. 1: (B).** Write Python code to split titanic dataset into training and testing sets (70-30 split). **Q. 1: (C).** Write Python code to print the name of all features of titanic dataset. **Q. 1: (D).** What are the main components of Artificial Neural Network? **Q. 1: (E).** What is difference between Artificial Intelligence, Machine Learning and Generative AI? **Q. 1:(F).** What do you mean by Tokenization?	CO1, CO2	L3

SECTION – B

All questions are compulsory (Each question has an internal choice. Attempt anyone (either A or B) from the internal choice) **6 x 3 = 18 Marks**

Questions	CO	Bloom's Level
Q. 2: (A). Explain Overfitting and Underfitting of model. **Or**	CO3	L3

Q. 2: (B). Apply Multiple Linear Regression on the Iris dataset and display only the decision boundary plot as the output. **Q. 3: (A).** Create a sample dataset using make_blobs library, apply Hierarchical Clustering, and display only the dendrogram plot as the output. **Or** **Q. 3: (B).** Perform Linear Discriminant Analysis (LDA) on iris dataset, and display the transformed components (reduced data) as the output. **Q. 4: (A).** Perform Support Vector Machine (SVM) classification on the Iris dataset and identify the class of a new flower with features (sepal length=5.1, sepal width=3.5, petal length=1.4, petal width=0.2). **Or** **Q. 4: (B).** Perform Artificial Neural Network (ANN) on the Iris dataset and predict the class of a new flower with features (sepal length=5.1, sepal width=3.5, petal length=1.4, petal width=0.2).	CO3 CO1, CO2	L4 L3

SECTION - C

Read the case and answer the questions **5×02 = 10 Marks**

Questions	**CO**	**Bloom's Level**
Q. 5: Case Study: Wine Dataset **Dataset description:** The Wine dataset is an inbuilt dataset that contains chemical properties of different wine samples. Questions: **Q. 5: (A).** Perform Decision Tree Classification on the dataset and interpret the results. Results should contain decision tree graph also. **Q. 5: (B).** Write a Python program to apply AdaBoost Classifier on the dataset and evaluate its performance.	CO4	L4 L4

Kindly fill the total marks allocated to each CO's in the table below:

COs	**Marks Allocated**	**Questions**
CO1	9	Q1, Q4
CO2	9	Q1, Q4
CO3	12	Q2, Q3
CO4	10	Q5

(Please ensure the conformity of the CO wise marks allocation as per your TLEP.)

Blooms Taxonomy Levels given below for your ready reference:

L1= Remembering
L2= Understanding
L3= Apply
L4= Analyze
L5= Evaluate
L6= Create