# ADITYA DEGREE COLLEGE

**ANDHRA PRADESH**

***II YEAR B.Sc IV-SEMESTER – MID 1 EXAMINATIONS***

***Machine Learning Using Python***

***Date:*** ***Max Marks : 60M***

## SECTION - A

**I Answer the FIVE of the following Questions 5 x 4 = 20M**

1. What is a hypothesis space in simple terms?
2. Why is VC dimension important for machine learning?
3. What is inductive bias in machine learning? Give a basic example.
4. What does gradient descent do in machine learning?
5. What is the main difference between discriminative and generative models?
6. What is bias-variance trade-off in simple terms?
7. How does the Perceptron algorithm work for classifying data?
8. What does the PAC learning framework mean in basic terms?

## SECTION – B

**II Answer the following Questions 4 x 10 = 40M**

9. a) Why do we need linear algebra in machine learning? Give simple examples.

(or)

b) What is generalization in machine learning? How does it help models perform well on new data?

10. a) What is Simple Linear Regression, and how is it used to predict outcomes?

(or)

b) How does Logistic Regression work for classification tasks?

11.a) How does Naive Bayes classify data? What assumptions does it make?

(or)

b) What is a support vector machine (SVM), and how does it separate data?

12. a) What is a Decision Tree, and how does it help in classification?

(or)

b) How does Random Forest improve upon Decision Trees?

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