

Roll No.

67197-N

**MCA 4th Semester 2 yr. Course
Examination – December, 2024**

MACHINE LEARNING OF PYTHON PROGRAMMING (I)

Paper : 21MCA24DB1

Time : Three Hours]

[Maximum Marks : 80

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions in all by selecting *one* question from each Unit and Question No. 1 which is *compulsory*. All question carry equal marks.

1. Compulsory question : $8 \times 2 = 16$

- (a) What are Kernel functions ?
- (b) What are multiple plots ?
- (c) What are Vectorized functions ?
- (d) What is NumPy ? State its relevance.
- (e) What do you mean by Pandas ?

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- (f) What are Fractals ?
- (g) What is unsupervised learning ?
- (h) What is Factor analysis ? State its significance.

UNIT - I

2. (a) What is machine learning ? How a learning system can be designed ? Discuss the concept of learning association in context of machine learning. 8
- (b) What do you mean by logistic regression ? How does it work ? Illustrate its relevance by giving suitable example. 8
3. Differentiate the following :
 - (a) SVM and Decision Trees. 6
 - (b) Overfitting and Underfitting. 5
 - (c) Finite and Infinite Hypothesis 5

UNIT - II

4. What do you mean by reinforcement learning ? How is it different from supervised learning ? How does it work ? What is the relevance of Q-Learning in it ? Illustrate. 16
5. Explain the following :
 - (a) Dimensionality Reduction and its essence. 8
 - (b) Random forest trees and its relevance 8