

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

Unit - I

(2)

6. (a) What is Python? What are its salient features? Why is Python suitable for Machine Learning? Why illustrate. 8
- (b) Provide the syntax and use of the following :
 - (i) Loops and Iterations 4
 - (ii) Lists and Strings 4
7. Illustrate the purpose and usage of the following :
 - (a) Modules and Packages 6
 - (b) Exception Handling 5
 - (c) Arrays and Matrices 5
8. (a) What is Matplotlib module? What is purpose and use in python programming? Illustrate its use through a suitable Python program segment. 8
- (b) What do you mean by 2D and 3D visualization? How are these significant in Machine Learning? How does Python implement the same? Illustrate. 8

Unit - III

(3)

Unit - IV

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MCA 4th Semester, 2 Year Course (w.e.f. 2020-21)

Examination, May-2023

MACHINE LEARNING AND PYTHON

PROGRAMMING (I)

Paper - 21MCA24DB1

Time allowed : 3 hours] [Maximum marks : 80

Note: Attempt five questions in all by selecting one question from each unit. Question no. 1 is compulsory. All questions carry equal marks.

1. (a) What is NumPy? State its relevance. $8 \times 2 = 16$
- (b) What is unsupervised learning?
- (c) What are multiple plots?
- (d) What are Vectorized functions?
- (e) What is Factor analysis? State its significance.
- (f) What do you mean by Pandas?
- (g) What are Kernel functions?
- (h) What are Fractals?

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(4)

9. Explain the following:

- (a) Data Distribution 8
- (b) Database and its usage in Python 8

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