

BT-5/D-22

45264

MACHINE LERNING WITH USING PYTHON

Paper-PC-CS-AIDS-307-A

Time : Three Hours]

[Maximum Marks : 75

Note : Attempt five questions in all, selecting atleast *one* question from each unit. All questions carry equal marks.

UNIT-I

- ✓ 1. (a) What is the list data structure in Python? What are its characteristic features? Write the code in Python to access the list elements using for loop.
- (b) What is function? How is it defined in Python? How is the default value passed as parameter to a function in Python? Illustrate.
- ✓ 2. (a) What do you understand by dictionary? Explain the following methods with an example :
(i) pop(), (ii) update(), (iii) clear(), (iv) get().
- (b) What is a class? How is it defined in Python? Discuss the use of `__init__()` method using suitable example.

UNIT-II

- ✓ 3. (a) What is the difference between supervised and unsupervised learning? Discuss.
- ✓ (b) Write a note on significance of numPy in deep learning.

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4. (a) How are the data files read using pandas? Also illustrate the procedure of feature extraction.
- (b) Write a detailed note on applications of Machine Learning.

UNIT-III

5. (a) What is logistic regression? What is the use of it in learning? Discuss its implementation in Python.
- (b) What do you understand by decision tree? Write a code in Python illustrating the use of decision tree.
- ✓ 6. (a) What is the K means clustering algorithm? How is the elbow method used to decide the value of K? Explain.
- ✓ (b) What is a recommender system? Explain the methodology of collaborative filtering in recommender system.

UNIT - IV

- ✓ 7. What is IBM systemML? What are its characteristic features? Discuss.
8. What is Apache Spark? Discuss the use of Scala in machine learning in Spark.

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