

SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)

(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)

Chromepet, Chennai - 600 044.

M.Sc.Biostatistics - END SEMESTER EXAMINATIONS - NOV' 2024

SEMESTER - III

23PBSCT3009 - Machine Learning Techniques

Total Duration : 2 Hrs. 30 Mins.

Total Marks : 60

Section B

Answer any **SIX** questions ($6 \times 5 = 30$ Marks)

1. Explain the main components of a learning system in machine learning.
2. Explain the concept of stacking in ensemble learning.
3. Prepare a note on Q-learning in reinforcement learning.
4. Describe the concept of evaluation of association patterns.
5. Illustrate and explain the ID3 algorithm used in decision trees.
6. Relate the basic concept of bagging and its application in random forest trees.
7. Sketch the concept of bias and variance in learning algorithms.
8. Examine how the a priori algorithm helps in rule mining.

Section C

I - Answer any **TWO** questions ($2 \times 10 = 20$ Marks)

9. Show the differences between supervised, unsupervised, and reinforcement learning with examples.
10. Prepare a note on the role of support vector machines (SVM) in classification. Compare linear and non-linear SVM.
11. Infer Adaboost in detail. How does it enhance the performance of weak classifiers?
12. Differentiate the relationship between temporal-difference learning and dynamic programming.

II - Compulsory question ($1 \times 10 = 10$ Marks)

13. Infer the steps involved in frequent item set generation using the a priori algorithm.
