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**III Semester M.C.A. Degree Examination May/June - 2025**  
**COMPUTER APPLICATIONS**  
**Machine Learning (Elective)**  
**(CBCS Scheme 2020-21)**

**Time : 3 Hours****Maximum Marks : 70****Instructions to Candidates :**Answer any **five** questions from Part - A.Answer any **four** questions from Part - B.**PART - A**Answer any **Five** questions. Each question carries **6** marks.**(5×6=30)**

1. Explain Hypothesis, Hypothesis Space and Version space with an example.
2. Discusses the steps for Designing Learning system.
3. Write a note on K-Nearest Neighbour Learning (K-NN).
4. Describe Back-Propagation Algorithm.
5. Discuss Bayes Theorem.
6. Elaborate Hidden Markov Models (HMM).
7. Explain Frequent Pattern (FP) Growth Algorithm.
8. Summarize the application of genetic Algorithm (GA) in Decision Tree.

**PART - B**Answer any **Four** questions. Each questions carries **10** marks.**(4×10=40)**

9. Discuss Metric Performance Measure for classification.
  10. Explain Applications and Limitations of Support Vector Machine (SVM). (6)
  11. a) Explain Naïve Bayes Classifier. (4)  
b) Explain Gibbs Algorithm in brief.
  12. Discuss the differences between:  
a) Hierarchical and Non-Hierarchical Clustering. (5)  
b) Agglomerative and Divisive Clustering. (5)
  13. Explain Single objective and Bi-objective problems using GA.
  14. Summarize different types of Machine Learning with suitable examples.
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