

**Code No: 156BN****JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year II Semester Examinations, August - 2022****MACHINE LEARNING****(Computer Science and Engineering)****Time: 3 Hours****Max.Marks:75****Answer any five questions  
All questions carry equal marks**

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- 1.a) Which disciplines have their influence on machine learning? Explain with examples.
- b) What are the different types of a Machine Learning models? [8+7]
- 2.a) List the problems that can be solved using machine learning.
- b) Discuss the issues in decision tree learning algorithm in detail. [8+7]
- 3.a) Explain back-propagation algorithm in detail.
- b) Explain the following:
  - i) General consistent hypothesis.
  - ii) Closed concepts in path through the hypothesis. [7+8]
- 4.a) Discuss the issues related to neural network learning.
- b) Write a detail note on sampling theory. [8+7]
- 5.a) Describe the Naive Bayesian method of classification. What assumptions does this method make about the ribues and the classification? Give an example where this assumption is to justify.
- b) What is the Laplacian correction and why it is necessary? [10+5]
- 6.a) Write the differences between Eager Learning and Lazy Learning approaches.
- b) State Bayes theorem. Illustrate Bayes theorem with an example. [7+8]
- 7.a) Write the basic algorithm for learning sets of First-Order Rules.
- b) Apply inverse resolution in propositional form to the clauses  $C=A \vee B$ ,  $C1=A \vee B \vee G$ . Give at least two possible results for  $C2$ . [7+8]
8. What are the differences between inductive learning and analytical learning problems and explain the same with an example. [15]

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