

R16

Code No: 138CY

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year II Semester Examinations, July - 2021

MACHINE LEARNING

(Electronics and Communication Engineering)

Time: 3 hours

Max. Marks: 75

**Answer any Five Questions
All Questions Carry Equal Marks**

- 1.a) How can a machine learn chess playing? Justify your answer with suitable design.
- b) What is the influence of statistics and psychology on machine learning domain? [8+7]
- 2.a) Explain the limitations of FIND-S algorithm.
- b) Illustrate the importance of entropy and information gain in decision tree induction. [7+8]
- 3.a) When are neural networks considered in machine learning? Discuss the suitable applications to support your answer.
- b) Explain error gradient for a Sigmoid unit. [7+8]
- 4.a) How to compare two learning methods? Explain with illustrations.
- b) Make a comparison of brute-force MAP learner with candidate elimination algorithm. [8+7]
- 5.a) What general laws constrain inductive learning?
- b) Define VC dimension of a hypothesis space.
- c) When does k-nearest neighbor approach Bayes optimal? Give an example. [5+5+5]
- 6.a) Explain genetic algorithm as an evolutionary computing approach.
- b) Demonstrate Web page classification using first order rules. [8+7]
- 7.a) Describe an algorithm to learn from perfect domain theories.
- b) What is the need of combining inductive and analytical learning? Explain with an example. [8+7]
8. Explain suitable learning approaches for hand written character recognition and compare their merits and demerits. [15]

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