R16

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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