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15CS73

Seventh Semester B.E. Degree Examination, Jan./Feb. 2021 **Machine Learning**

Time: 3 hrs. Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

| 1 | a. | Define machine learning. Explain with specific examples. | (06 Marks) |
|---|----|---|------------|
| | b. | How you will design a learning system? Explain with examples. | (06 Marks) |
| | C. | List and explain perspectives and issues in Machine Learning. | (04 Marks) |

| 2 | a. | Define concept learning. Explain the task of concept learning. | (06 Marks) |
|---|----|---|------------|
| | b. | How the concept learning can be viewed as the task of searching? Explain. | (04 Marks) |
| | 0 | Evaloin with examples: | |

Explain with examples:

Find-S algorithm Candidate Elimination algorithm ii)

(06 Marks)

Module-

| 3 | a. | Define decision tree learning. List and explain appropriate problems for | decision tree |
|---|----|--|---------------|
| | | learning. | (06 Marks) |
| | b. | Explain the basic decision tree learning algorithm. | (05 Marks) |

c. Describe Hypothesis space search in decision tree learning.

(05 Marks)

| 4 | a. | Define inductive bias. Explain inductive bias in decision tree learning. | (06 Marks) |
|---|----|---|-------------|
| | b. | Give the differences between the hypothesis space search in ID3 and candidate e | elimination |
| | | algorithm. | (04 Marks) |

c. List and explain issues in decision tree learning.

(06 Marks)

Module-3

| | a. | Define Artificial neural networks. Explain biological learning systems. | (05 Marks) |
|--|----|---|------------|
| | b. | Explain representations of Neural network. | (05 Marks) |

c. Describe the characteristics of Back propagation algorithm.

(06 Marks)

OR

| 6 | a. | Define Perceptron. Explain representational power of Perceptrons. | (05 Marks) |
|---|----|---|-------------|
| | b. | Explain gradient descent algorithm. | (06 Marks) |
| | 0 | Describe derivation of the back propagation rule | (05 Moules) |

(U5 Marks)

Module-4

| a. List and explain leatures of Bayesian learning methods. | (06 Marks) |
|---|------------|
| b. Describe Brute-Force map learning algorithm. | (05 Marks) |
| c. Explain maximum likelihood and least-squared error hypothesis. | (05 Marks) |

1 of 2

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