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Total Number of Pages : 01

M.TECH

AR-19

M.TECH 1<sup>ST</sup> SEMESTER EXAMINATIONS NOV/DEC 2019

CSE, MPECS1031

MACHINE LEARNING

Time: 3 Hours

Max Marks : 70

The figures in the right hand margin indicate marks.

PART-A

(10 X 2=20 MARKS)

1. Answer the following questions.

- a) How is KNN different from k-means clustering?
- b) Define precision and recall?
- c) What is the trade-off between bias and variance?
- d) Explain the difference between L1 and L2 regularization?
- e) Mention the difference between Data Mining and Machine learning?
- f) What are the three stages to build the hypotheses or model in machine learning?
- g) What are the two methods used for the calibration in Supervised Learning?
- h) What is PCA, KPCA and ICA used for?
- i) What is Model Selection in Machine Learning?
- j) Explain the term Genetic Programming

PART-B

(5 X 10=50 MARKS)

Answer any five questions from the following.

2

- a) List out Machine Learning Algorithms and explain briefly Random Forest Algorithm.
- b) Elaborate briefly about machine learning and deep learning.

3

- a) Use decision tree to classify the students in a class based on their academic performance
- b) What is scalable machine learning? Write down inference in graphical models

4

- a) Explain the Canonical cases for conditional independence.
- b) Explain the various techniques for optimization of Support Vector Machine(SVM).

5.

- a) Explain Dimensionality reduction using forward selection with suitable example
- b) Distinguish between classification tree and regression tree.

6.

- a) Write down difference between K-Means and Kernel k-Means?
- b) Distinguish between PCA and Kernel PCA?

7.

- a) Illustrate the term boosting and bagging in machine learning?
- b) Explain Bayesian learning method?

8.

- Write short notes on
  - a) Reinforcement learning
  - b) Supervised Learning