

Registration No :

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Total Number of Pages : 01

M.Tech.
P2MDCC13

2nd Semester Regular Examination 2017-18
FAST MACHINE LEARNING
BRANCH : MACHINE DESIGN,
MECH. SYSTEM DESIGN, SYSTEM DESIGN
Time : 3 Hours
Max Marks : 100
Q.CODE : C1078

Answer Part-A which is compulsory and any four from Part-B.
The figures in the right hand margin indicate marks.
Answer all parts of a question at a place.

Part – A (Answer all the questions)

- Q1 Answer the following questions: *Short answer type* (2 x 10)**
- a) How are Artificial Intelligence and Machine Learning related?
 - b) What do you mean by decision tree learning?
 - c) What is the decision boundary for Naïve Bayes?
 - d) What is the difference between a classifier and a model?
 - e) What is over fitting?
 - f) What is Euclidean distance in terms of machine learning?
 - g) What is SVM?
 - h) What is the difference between a cost function and a loss function in machine learning?
 - i) Define confidence interval.
 - j) Why logistic regression is considered a linear model?

Part – B (Answer any four questions)

- Q2 a) Describe the method of learning using locally weighted linear regression. (10)**
b) What are the issues in Decision tree learning? How they are overcome? (10)
- Q3 a) Explain the final design of checkers learning system. (10)**
b) What do you mean by Gain and Entropy? How is it used to build the decision tree in algorithm? Illustrate using an example. (10)
- Q4 a) Describe k-nearest neighbor algorithm. Why is it called instance based learning? (10)**
b) Explain how naïve bayes algorithm is useful for learning and classifying text. (10)
- Q5 a) Explain the perceptron training rule and gradient descent & the delta rule. (10)**
b) What are the steps in Back propagation algorithm? Why a Multilayer neural network is required? (10)
- Q6 a) Describe these terms in brief (I) PAC Hypothesis (II) Mistake bound model of learning. (10)**
b) What is the role of a function approximation algorithm? How does learner system estimate training values and adjusts weights while learning? (10)
- Q7 Write notes on : (5 x 4)**
- a) Simple Error and True Error.
 - b) Mean and Variance.
 - c) K-term DNF.
 - d) Central Limit Theorem.