Total No. of Printed Pages:1

SUBJECT CODE NO:- P-8003

FACULTY OF ENGINEERING AND TECHNOLOGY

M.E. (Comp.Sci.& Engg.) Examination May/June 2017

Machine Learning

(Revised)

[Time : Three Hours] **[Max Marks :80]**

Please check whether you have got the right question paper.

N.B
i. Solve any two questions from each section.
ii. Assume suitable data if necessary and state it clearly.

Section A

Q.1	a)	Explain the inductive bias with biased hypothesis space and unbiased leaner. What do you mean by a well – posed learning problem? Explain the important features that are required to well – define a learning problem.	10
	b)	What are Version spaces and candidate – Elimination algorithm? Is it better over find – S Algorithm?	10
Q.2	a)	What is the importance of Binomial and Normal distribution? How two learning algorithms are compared using True Error and Sample Error?	10
	b)	What do you mean by gain and entropy? How are they used to build the Decision tree in ID3 algorithm? Illustrate using an example.	10
Q.3	a)	What is multilayer perceptron? How is it trained using back propagation? What in linear separability issue?	12
	b)	Design a prototypical neural network for Face recognition task. Describe all the steps involved.	08

Section B

Q.4	a)	What is Brute force MAP hypothesis learner? What is the minimum description length (MDL) principle?	10
	b)	What is the process of maximum likelihood hypotheses for predicting probabilities?	10
Q.5	a)	What is the use of k – NN algorithm? Is there any issue with this instance – based learning algorithm?	10
	b)	Describe the mechanism of learning using the method of case – based reasoning.	10
Q.6	a)	What are the methods of creating new generation in genetic algorithm?	10
	b)	Describe in brief (any two) i. Parallelizing genetic algorithms ii. Radial basis functions iii. PAC hypothesis.	10