Internal Assessment Test 2 – Oct. 2018

Sub:	**Machine Learning**					Sub Code:	**15CS73**	Branch:	**CSE**		
Date:	**17.10.18**	Duration:	90 min's	Max Marks:	50	Sem/Sec:		**7/A,B,C**		OBE	

Answer any FIVE FULL Questions

			MARKS	CO	RBT
1 (a)	Explain appropriate problems for Neural Network Learning with its characteristics.		[5]	CO2	L2
(b)	Consider two perceptrons defined by the threshold expression $w_0+w_1x_1+w_2x_2>0$.		[5]	CO4	L3
	Perceptron A has weight values $w_0 =1$, $w_1 =2$, $w_2 =1$, and				
	Perceptron B has weight values $w_0 =0$, $w_1 =2$, $w_2 =1$				
	True or False? Perceptron A is more general than Perceptron B.				
2 (a)	Explain gradient decent algorithm along with derivation		[5]	CO4	L2
(b)	Write the differences between standard and stochastic gradient descent approach.		[5]	CO4	L3
3.	Explain the following components of artificial neural networks i) Perceptrons ii) Representational power of Perceptrons iii) Perceptron training rule		[10]	CO4	L2
4.	When will you go for multi layer neural networks? Give the derivation of the back propagation rule.		[10]	CO4	L2
5.	Explain the back propagation algorithm. Mention its limitations. Why is it not likely to be trapped in local minima?		[10]	CO4	L2
6.	Prove that posterior probability of hypothesis H(H is consistent with D) is inversely proportionate to version space of H with respect to D by using bayes theorem.		[10]	CO3	L2
7 (a)	What is Bayes' Theorem? How is it useful in a machine learning context?		[5]	CO3	L2
(b)	Write the features of Bayesian Learning methods.		[5]	CO3	L3
8.	A patient takes a lab test and the result comes back positive. It is known that the test returns a correct positive result in only 98% of the cases and a correct negative result in only 97% of the cases. Furthermore, only 0.008 of the entire population has this disease. i). What is the probability that this patient has cancer? ii). What is the probability that the patient does not have cancer? iii) What is the diagnosis?		[10]	CO4	L3