	ADAMAS UNIVERSITY		
	END SEMESTER EXAMINATION		
	(Academic Session: 2020 – 21)		
Name of the Program:	**M. Tech CSE**	**Semester:**	**II**
Paper Title:	**Machine Learning**	**Paper Code:**	**CSE21816**
Maximum Marks:	**50**	**Time Duration:**	**3 Hrs**
Total No. of Questions:	**17**	**Total No of Pages:**	**2**
(Any other information for the student may be mentioned here)	**1.** At top sheet, clearly mention Name, Univ. Roll No., Enrolment No., Paper Name & Code, Date of Exam. **2.** All parts of a Question should be answered consecutively. Each Answer should start from a fresh page. **3.** Assumptions made if any, should be stated clearly at the beginning of your answer.		

Group A			
Answer All the Questions (5 x 1 = 5)			
1	**Which** of the following is a widely used and effective machine learning algorithm based on the idea of bagging? a) Decision Tree b) Regression c) Classification d) Random Forest	**Remembering**	**CO2**
2	The output at each node is called_____. a) node value b) weight c) neurons d) axons	**Analyzing**	**CO1**
3	Bayesian Belief Network is also known as - a) belief network b) decision network c) Bayesian model d) All of the above	**Remembering**	**CO5**
4	If the parent solutions are 1000111 and 1010101 and crossover site is 4, **which** of the following indicates one of the new offspring? a) 1010100, b) 1000101, c) 1110110, d) 1000011	**Remembering**	**CO4**
5	**Which** of the following is not a supervised learning? a) Naive Bayesian b) PCA c) Linear Regression d) Decision Tree Answer	**Remembering**	**CO2**
Group B			
Answer All the Questions (5 x 2 = 10)			
6 a)	**Classify** positive and negative examples for the target concept.	**Understanding**	**CO1**
(OR)			
6 b)	**Define** the inductive Learning Hypothesis	**Remembering**	**CO2**
7 a)	**Distinguish** between crossover and mutation.	**Analyzing**	**CO3**
(OR)			

7 b)	**Explain** genetic programming.	**Understanding**	**CO2**
8 a)	**Define** Bayes Theorem.	**Remembering**	**CO1**
	(OR)		
8 b)	**Illustrate** the biological motivation for studying ANN.	**Understanding**	**CO1**
9 a)	**Show** the radial basis function network.	**Understanding**	**CO1**
	(OR)		
9 b)	**Define** crowding.	**Remembering**	**CO2**
10 a)	**Illustrate** how the Instance-based learning methods differ from function approximation.	**Understanding**	**CO1**
	(OR)		
10 b)	**What** are the difference between Regression, Residual, Kernel function.	**Remembering**	**CO3**
Group C **Answer All the Questions (7 x 5 = 35)**			
11 a)	**Explain** whether the Candidate –Elimination Algorithm Converge to the Correct Hypothesis or not.	**Evaluating**	**CO3**
	(OR)		
11 b)	Point out **how** the eager learning differs from lazy learning?	**Remembering**	**CO3**
12 a)	**Compose** what is decision tree. Draw the decision trees to represent the following Boolean functions: a)A ∧ ¬ B b) A∨[B∧C] c)A *XOR* B d)[A∧B] ∨[C∧D]	**Creating**	**CO4**
	(OR)		
12 b)	**Discuss** in detail the rule for estimating training values.	**Creating**	**CO4**
13 a)	**Explain** about the Futility of Bias-Free Learning.	**Evaluating**	**CO3**
	(OR)		
13 b)	**Discuss** about perceptron with an example.	**Creating**	**CO4**
14 a)	**Explain** the prototypical example of ANN.	**Evaluating**	**CO3**
	(OR)		
14 b)	**Illustrate** with an example why Gibbs Algorithm is better than the Bayes Optimal classifier.	**Understanding**	**CO4**
15 a)	**Summarize** in detail the relationship between Bayes theorem and Concept learning.	**Understanding**	**CO3**
	(OR)		
15 b)	**Explain** the radial basis functions.	**Evaluating**	**CO4**
16 a)	**Compose** the three properties that is shared by the Instance based methods.	**Creating**	**CO3**
	(OR)		
16 b)	**Build** short notes on Radial basis functions.	**Creating**	**CO4**
17 a)	**Show** the voronoi diagram for k nearest neighbour.	**Remembering**	**CO4**
	(OR)		
17 b)	**Build** short notes on Inductive Bias.	**Creating**	**CO1**