MARRI LAXMAN REDDY
INSTITUTE OF TECHNOLOGY AND MANAGEMENT
(AN AUTONOMOUS INSTITUTION)
(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)
Accredited by NBA and NAAC with 'A' Grade & Recognized Under Section2(f) & 12(B)of the UGC act,1956

MLRS

III B.Tech I Sem Supply End Examination, December 2022
MACHINE LEARNING
(IT)

Time: 3 Hours.   Max. Marks: 70

Note: 1. Question paper consists: Part-A and Part-B.
   2. In Part – A, answer all questions which carries 20 marks.
   3. In Part – B, answer any one question from each unit.
      Each question carries 10 marks and may have a, b as sub questions.

PART- A
(10*2 Marks = 20 Marks)

1. a)	What are the important objectives of machine learning?	2M	CO1	BL1
b)	What do you mean by a well –posed learning problem?	2M	CO1	BL1
c)	What is Artificial Neural Network?	2M	CO2	BL1
d)	What do you mean by difference of error in two hypotheses	2M	CO2	BL1
e)	What are Bayesian Belief nets? Where are they used?	2M	CO3	BL1
f)	Describe Maximum Likelihood Hypothesis for predicting probabilities?	2M	CO3	BL2
g)	What factors contribute to the popularity of genetic algorithm?	2M	CO4	BL1
h)	What is the essential difference between analytical and inductive learning methods?	2M	CO4	BL1
i)	What are the limitations of explanation based learning?	2M	CO5	BL1
j)	What are inductive analytical approaches to learning	2M	CO5	BL1

PART- B
(10*5 Marks = 50 Marks)

2 a)	Which disciplines have their influence on machine learning? Explain with examples. ?	5M	CO1	BL4
b)	Explain Decision Tree Representation and the basic decision tree learning algorithm?	5M	CO1	BL4

OR

3 a)	Contrast the hypothesis space search in ID3 and candidate elimination algorithm.	5M	CO1	BL5
b)	Illustrate the impact of overfitting in a typical application of decision tree learning.	5M	CO1	BL5

4 a)	What is state space model of artificial neural networks? How it can be used for optimization of various applications	5M	CO2	BL1
b)	Explain about Back-Propagation algorithm	5M	CO2	BL4

5	a)	Can you distinguish between error of hypotheses with proper example	5M	CO2	BL2
	b)	Discuss about basics of sampling theory	5M	CO2	BL2
6	a)	Based on what you know, explain Bayes optimal classifier	5M	CO3	BL4
	b)	Illustrate with an example about k-nearest neighbour algorithm	5M	CO3	BL4

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7	a)	In machine learning can we use Gibs algorithm? Justify	5M	CO3	BL5
	b)	Discuss the major drawbacks of K-nearest Neighbour learning Algorithm and how it can be corrected	5M	CO3	BL2
8	a)	Explain Q learning algorithm assuming deterministic rewards and actions?	5M	CO4	BL4
	b)	Explain about sequential covering algorithms	5M	CO4	BL4

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9	a)	Is learning is possible in temporal difference method? Justify	5M	CO4	BL5
	b)	How can we use Genetic algorithms in AI	5M	CO4	BL1
10	a)	Explain about PROLOG-EBG? And also explain about properties of PROLOG-EBG	5M	CO5	BL4
	b)	Explain about prior knowledge to alter the search objective	5M	CO5	BL4

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11	a)	Explain about prior knowledge to initialize the hypothesis	5M	CO5	BL4
	b)	Explain about explanation-based learning of search control knowledge	5M	CO5	BL4

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CO - Course Outcome   **BL - Blooms Taxonomy Levels**