CBCS SCHEME

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BEC515A

ACHARYA INSTITUTE OF TECHNOLOGY MCA Library Date ..... BANGALORE

Fifth Semester B.E./B.Tech. Degree Examination, Dec.2025/Jan.2026
Intelligent System and Machine Learning Algorithm

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Explain the following four approaches to AI i) Acting Humanly ii) Thinking Humanly iii) Acting Rationaly iv) Thinking Rationaly	10	L2	CO1
	b.	Explain the foundations of AI in detail.	10	L2	CO1
		OR			
Q.2	a.	Briefly, explain the properties of task environment.	10	L2	CO1
	b.	Explain the four basic kinds of agent programs.	10	L2	CO1
		Module – 2			
Q.3	a.	Explain Goal Formulation and problem formulation with examples.	6	L2	CO2
	b.	Explain the five components of a problem.	4	L2	CO2
	c.	Discuss the Toy problems and real world problems with an example for each.	10	L2	CO2
		OR			
Q.4	a.	Explain Breadth-first search and Depth-first search strategies with example.	10	L2	CO2
	b.	Explain Iterative deepening depth first search and Bidirectional search strategies.	10	L2	CO2
		Module – 3			
Q.5	a.	Explain A^* search and memory – bounded heuristic search with example.	10	L2	CO2
	b.	Discuss Heuristic function in detail.	10	L2	CO2
		OR			
Q.6	a.	Explain the Wumpur world knowledge based agent with example.	10	L2	CO3
	b.	Explain the syntax and semantics of propositional logic.	10	L2	CO3

		Module – 4			
Q.7	**a.**	What is Machine Learning? Explain different perspective and issues in machine learning.	**8**	**L2**	**CO4**
	b.	Explain Supervised and Unsupervised machine learning concepts.	**8**	**L2**	**CO4**
	c.	What do you mean by underfitting the training data in machine learning and list the options to fix this problem?	**4**	**L2**	**CO4**
		OR			
Q.8	**a.**	Explain the final design of the checkers learning program.	**8**	**L2**	**CO4**
	b.	Explain Find-S algorithm with example.	**8**	**L2**	**CO4**
	c.	Explain the LIST-THEN-ELIMINATE algoirhtm.	**4**	**L2**	**CO4**
		Module – 5			
Q.9	**a.**	Explain the steps involved to prepare the data for machine learning algorithms in end to end machine learning project.	**10**	**L2**	**CO5**
	b.	Explain how to select and train a machine learning model.	**10**	**L2**	**CO5**
		OR			
Q.10	**a.**	Explain the following performance measures. i) Measuring Accuracy Using Cross-Validation ii) Confusion Matrix	**10**	**L2**	**CO5**
	b.	Explain the following classifiers i) Multiclass classification ii) Multilabel classification	**10**	**L2**	**CO5**

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