B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

January / February 2025 Semester End Main Examinations

Programme: B.E.　　　　　　　　　　　　　　　　　　　　　**Semester: V**

Branch: Information Science and Engineering　　　　　**Duration: 3 hrs.**

Course Code: 23IS5PEAIS　　　　　　　　　　　　　　　　**Max Marks: 100**

Course:　Artificial Intelligence

Instructions:　1. Answer any FIVE full questions, choosing one full question from each unit.
　　　　　　　　　2. Missing data, if any, may be suitably assumed.

			UNIT - I	CO	PO	Marks
1	a)		What is AI? Illustrate in detail the four approaches or views of AI.	*CO1*	*PO1*	**10**
	b)		Demonstrate with an example, the working of Depth first search.	*CO1*	*PO1*	**10**
			OR			
2	a)		Describe the structure of intelligent agents and environment in artificial intelligence with an example.	*CO1*	*PO1*	**10**
	b)		Explain Iterative Deepening search with an example.	*CO1*	*PO1*	**10**
			UNIT - II			
3	a)		Write the AO algorithm for problem reduction. Illustrate with an example.	*CO 2*	*PO1*	**10**
	b)		Explain the algorithm for Generate-and-Test. Illustrate with an example.	*CO2*	*PO1*	**10**
			OR			
4	a)		Explicitly illustrate the simple hill climbing algorithm with an algorithm and example.	*CO2*	*PO1*	**10**
	b)		Write A* search algorithm. Illustrate with an example.	*CO2*	*PO1*	**10**
			UNIT - III			
5	a)		Design a system that combines both forward and backward reasoning to enhance the accuracy and efficiency of diagnosing various medical conditions.	*CO3*	*PO2*	**10**
	b)		Articulate in detail the 7 steps of the knowledge-engineering process in First Order Logic	*CO3*	*PO2*	**10**
			OR			

	6	a)	Differentiate along with an example, Procedural versus Declarative representation of knowledge.	*CO3*	*PO2*	**10**
		b)	Write the algorithm for backward chaining. Illustrate with an example.	*CO3*	*PO2*	**10**
			UNIT - IV			
	7	a)	Explain the Learning Architecture with a neat diagram.	*CO4*	*PO3*	**10**
		b)	Illustrate candidate elimination algorithms with an example.	*CO4*	*PO3*	**10**
			OR			
	8	a)	Differentiate between case-based reasoning and explanation-based learning.	*CO4*	*PO3*	**10**
		b)	Explain the Learning in Decision Trees. Elaborate on how to avoid overfitting in decision trees.	*CO4*	*PO3*	**10**
			UNIT - V			
	9	a)	Describe Bayes' rule. Illustrate the working of Bayes' rule in combining evidences.	*CO5*	*PO3*	**10**
		b)	"Where do probability come from?" Validate the statement summarizing the different probabilistic views.	*CO5*	*PO3*	**10**
			OR			
	10	a)	Describe knowledge representation in an uncertain domain. Illustrate with an example.	*CO5*	*PO3*	**10**
		b)	Discuss the axioms of probability in detail.	*CO5*	*PO3*	**10**

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