O.P.Code: 23CS0901	R23	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. II Year I Semester Regular Examinations February-2025
PRINCIPLES OF ARTIFICIAL INTELLIGENCE
(Common to CAD, CSM & CAI)

Time: 3 Hours **Max. Marks: 70**

PART-A
(Answer all the Questions **10 x 2 = 20** Marks)

1	a	Define intelligent agent.	CO1	L2	2M
	b	State and list PEAS for Medical diagnosis system.	CO1	L1	2M
	c	List and define how the search algorithms are classified?	CO2	L1	2M
	d	Differentiate between A* and AO*algorithm.	CO2	L2	2M
	e	State the Techniques of knowledge representation.	CO3	L1	2M
	f	What is Uncertainty in Artificial Intelligence?	CO3	L2	2M
	g	State binary Resolution rule.	CO4	L1	2M
	h	Give the difference between Propositional vs. First-Order Logic Inferences.	CO4	L2	2M
	i	What is knowledge acquisition?	CO5	L2	2M
	j	List the Pros and cons of knowledge acquisition.	CO5	L1	2M

PART-B
(Answer all Five Units 5 x 10 = 50 Marks)

UNIT-I

2	a	State some definitions of artificial intelligence, and how can they be categorized.	CO1	L2	5M
	b	Discuss how artificial intelligence categorized based on different approaches, and what do these categories entail?	CO1	L2	5M
		OR			
3		Analyze different types of agents, and explain how do they interact with their environments.	CO1	L4	10M

UNIT-II

4		What are Heuristic algorithms? Analyze in detail the different types of Heuristic algorithms with example.	CO2	L4	10M
		OR			
5		Describe the Hill Climbing Algorithm in Artificial Intelligence with its State-space Diagram.	CO2	L2	10M

UNIT-III

6		Analyze the different approaches to knowledge representation.	CO3	L6	10M
		OR			
7	a	Explain how logical connectives in propositional logic are represented.	CO3	L3	6M
	b	Discuss predicate logic and how are they used.	CO3	L2	4M

UNIT-IV

8		Explain in detail about Syntax and Semantics of First-Order Logic with examples.	CO4	L3	10M
		OR			
9		Discuss Explanation-based learning. Illustrate its working with neat architecture diagram and example.	CO4	L2	10M

UNIT-V

10	a	Analyze the Types of expert systems in AI elaborately.	CO5	L4	5M
	b	Describe the Architecture of expert systems in detail with neat diagram.	CO5	L2	5M
		OR			
11		Discuss what is DART with its key capabilities, architecture, real-world applications, advantages, and limitations.	CO5	L2	10M

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