O.P.Code: 23CS0516	R23	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech. III Year I Semester Regular Examinations December-2025

ARTIFICIAL INTELLIGENCE

(Common to CSE & CSIT)

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

PART-A

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

1	a	What is AI? List out the categories in which AI definitions are organized.	CO1	L1	2M
	b	What are the key factors that determine the rationality of an agent at any given time?	CO1	L1	2M
	c	Differentiate between A* and AO*algorithm.	CO2	L1	2M
	d	State Heuristic function and Heuristic values.	CO2	L1	2M
	e	List the kind of knowledge which needs to be represented in AI systems.	CO3	L1	2M
	f	What is Uncertainty in Artificial Intelligence?	CO4	L1	2M
	g	State difference between Reinforcement Learning and Supervised Learning.	CO5	L1	2M
	h	What is FOL?	CO5	L1	2M
	i	Draw the block diagram of expert system working.	CO5	L1	2M
	j	List the Pros and cons of knowledge acquisition.	CO6	L1	2M

PART-B

(Answer all Five Units **5 x 10 = 50** Marks)

UNIT-I

2		List and explain in detail the foundation of Artificial Intelligence.	CO1	L2	10M

OR

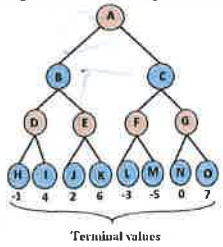
3	a	Discuss the four components used to define a problem formally.	CO1	L2	5M
	b	Illustrate with an example what is meant by formulating problems.	CO1	L3	5M

UNIT-II

4	a	What are common problems in game playing AI, and how can they be addressed explain with an example?	CO1	L1	5M
	b	State Game Tree and discuss the concepts for defining a Game Tree with an example.	CO1	L2	5M

OR

5		Describe Mini-Max Algorithm in Artificial Intelligence. Solve the following Game tree using Mini-Max Algorithm.	CO1	L2	10M



UNIT-III

6	a	Describe Knowledge representation and it's types in AI.	CO3	L2	5M
	b	Explain the kind of knowledge which needs to be represented in AI systems.	CO3	L2	5M

OR

7	a	What is Constraint Propagation in AI? How Constraint Propagation Works?	CO3	L1	5M
	b	What are expert systems? Illustrate how representing knowledge using rules in artificial intelligence work.	CO3	L3	5M

UNIT-IV

8		Explain in detail about Syntax and Semantics of First-Order Logic with examples.	CO5	L2	10M

OR

9		Explain decision tree in detail with example. Discuss how identification of attribute is performed in decision tree.	CO5	L2	10M

UNIT-V

10	a	Analyze the Types of expert systems in AI elaborately.	CO6	L4	5M
	b	Describe the Architecture of expert systems in detail with neat diagram.	CO6	L2	5M

OR

11		Illustrate Expert System Shell in AI along with its components, types, benefits, challenges, and applications.	CO6	L3	10M

***** END *****