

Code No: **R20A0513****MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY****(Autonomous Institution – UGC, Govt. of India)****II B.Tech I Semester Supplementary Examinations, June 2025****Artificial Intelligence****(B.Tech-AIML)**

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

**Note:** This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing **ONE** Question from each SECTION and each Question carries 14 marks.

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**SECTION-I**

			BCLL	CO(s)	Marks
1	<i>A</i>	Explain how agents interact with environments through sensors and actuators with the help of block diagram	L2	CO-I	[7M]
	<i>B</i>	With the help of example, explain Breadth First Search algorithm.	L3	CO-I	[7M]

OR

2	<i>A</i>	Describe how the components of agent programs work	L2	CO-I	[7M]
	<i>B</i>	Explain A* algorithm. What are the conditions for optimality?	L2	CO-I	[7M]

**SECTION-II**

3	<i>A</i>	Give a brief note on Alpha-Beta Pruning	L1	CO-II	[7M]
	<i>B</i>	Explain how A* search improves upon other search algorithms.	L2	CO-II	[7M]

OR

4	<i>A</i>	Discuss Form grammar of sentences in propositional logic.	L2	CO-II	[7M]
	<i>B</i>	Write down simple backward-chaining algorithm for first-order knowledge bases.	L1	CO-II	[7M]

**SECTION-III**

5	<i>A</i>	Discuss the knowledge representation issues in detail.	L2	CO-III	[7M]
	<i>B</i>	With the help of example, describe Nonmonotonic Reasoning	L3	CO-III	[7M]

OR

6	<i>A</i>	State Baye's rule. Explain its applications.	L2	CO-III	[7M]
	<i>B</i>	Write down a method for constructing Bayesian networks	L1	CO-III	[7M]

**SECTION-IV**

7	<i>A</i>	What is learning? Explain different forms of learning.	L2	CO-IV	[7M]
	<i>B</i>	Discuss learning by taking advice with an example.	L2	CO-IV	[7M]

OR

8	<i>A</i>	How does learning from examples differ from rote learning	L2	CO-IV	[7M]
	<i>B</i>	Write down the steps in decision tree learning algorithm	L1	CO-IV	[7M]

**SECTION-V**

9	<i>A</i>	Discuss the importance of domain knowledge in the expert systems.	L2	CO-IV	[7M]
	<i>B</i>	Describe the capabilities of expert systems that allow them to interact effectively with users.	L2	CO-IV	[7M]

OR

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|-----------|-----------------|---|-----------|--------------|-------------|
| <b>10</b> | <b><i>A</i></b> | How are expert systems built? Explain with an example.                              | <b>L2</b> | <b>CO-IV</b> | <b>[7M]</b> |
|           | <b><i>B</i></b> | Evaluate the strengths and weaknesses of expert systems in real-world applications. | <b>L4</b> | <b>CO-IV</b> | <b>[7M]</b> |

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