

**BACHELOR OF TECHNOLOGY (CBCS - 2023)**  
**B. Tech. Sem-IV Computer Science & Engineering AI & ML : SUMMER : 2025**  
**SUBJECT: FOUNDATION OF ARTIFICIAL INTELLIGENCE**

Day : Thursday  
Date : 29/05/2025

**S-29280-2025**

Time : 10:00 AM-01:00 PM  
Max. Marks : 60

**NB :**

1. Assume suitable data, if necessary.
2. Draw neat labelled diagrams WHEREVER necessary.
3. Figures to the right indicate FULL marks for the question.
4. All questions are COMPULSORY.

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|------|--|------|
| Q. 1 | Differentiate between simple reflex agents and model-based reflex agents.    | (10) |
|      | <b>OR</b>  |      |
| Q. 1 | Explain the Importance of Sensors and Actuators in Intelligent Agents.       | (10) |
| Q. 2 | Explain the working of Breadth-First Search (BFS) Algorithm with an example? | (10) |
|      | <b>OR</b>  |      |
| Q. 2 | What is A* Search Algorithm ? Explain with a suitable example.               | (10) |
| Q. 3 | What is a Constraint Satisfaction Problem (CSP)? Give an example.            | (10) |
|      | <b>OR</b>  |      |
| Q. 3 | Explain the Minimax Search Algorithm with an example of a two-player game?   | (10) |
| Q. 4 | What are the major issues in knowledge representation in AI?                 | (10) |
|      | <b>OR</b>  |      |
| Q. 4 | Discuss Advantages and Limitations of Rule-Based Knowledge Representation?   | (10) |
| Q. 5 | Why it is important to Represent Knowledge in Uncertain Domains?             | (10) |
|      | <b>OR</b>  |      |
| Q. 5 | How are Conditional Probabilities used in Bayesian Network?                  | (10) |
| Q. 6 | What is a Rule-Based System? Give an Example.                                | (10) |
|      | <b>OR</b>  |      |
| Q. 6 | What are the Different Types of Learning in AI?                              | (10) |

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