

Question Bank

Course Name: Elective I(A) - Artificial Intelligence

Course Code: CSE10501A

Unit III: Planning and Knowledge Representation

Planning: Classical planning, algorithms for planning as state-space search, planning graphs, time, schedules, and resources, hierarchical planning, planning, and acting in nondeterministic domains, multiagent planning.

Knowledge Representation: Ontological engineering, categories and objects, events, mental events and mental objects, reasoning systems for categories, reasoning with default information, the internet shopping world.

Prolog: Facts, Rules, Clauses, Lists, Logical Operators, Prolog Program for Relations, List Operations, Prolog for artificial intelligence

Unit IV: Uncertain Reasoning

Quantifying Uncertainty: Acting under uncertainty, basic probability notation, inference using full joint distributions, independence, Bayes' rule, and its use, the Wumpus world revisited.

Probabilistic Reasoning: Representing knowledge in an uncertain domain, the semantics of Bayesian networks, time and uncertainty, inference in temporal models, hidden Markov models.

Sr. No.	Questions
1	Explain the concept of heuristics in planning. Provide examples of heuristic functions commonly used in state-space search
2	Discuss the concept of decentralized planning and provide an example scenario where it is used
3	Explain the concept of ontological engineering and analyze its role in structuring knowledge for AI systems. Provide examples of its applications.
4	Explain how Bayes' rule is applied to infer probabilities in uncertain environments, and analyze its significance in decision-making under uncertainty.
5	Identify the main components of a hidden Markov model (HMM) and explain how they work together to model sequential data.
6	Illustrate how Bayesian networks represent knowledge in uncertain domains, and evaluate their effectiveness in capturing dependencies among variables.