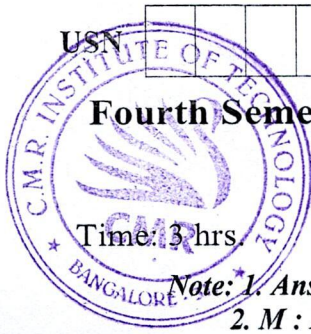


CBCS SCHEME

BAD402



Fourth Semester B.E./B.Tech. Degree Examination, Dec.2025/Jan.2026 Artificial Intelligence

Time: 3 hrs.

Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.

2. M : Marks, L: Bloom's level, C: Course outcomes.

Module - 1			M	L	C
Q.1	a.	Define AI. Explain the foundation of AI in detail.	10	L2	CO1
	b.	Explain the historical development of AI, highlighting key milestones and breakthroughs.	10	L2	CO1
OR					
Q.2	a.	Briefly explain the properties of Task Environment.	10	L2	CO1
	b.	Explain the following with respect to structure agents: (i) Simplex reflex (ii) Model based reflex (iii) Utility based	10	L2	CO1
Module - 2					
Q.3	a.	Discuss how problem solving agents interact with their environments.	10	L2	CO2
	b.	Explain the principles of breadth-first search as a problem solving strategy with an example.	10	L2	CO2
OR					
Q.4	a.	Discuss the different solutions and metrics for searching.	10	L2	CO2
	b.	Explain Goal Formulation and Problem Formulation with examples.	10	L2	CO2
Module - 3					
Q.5	a.	Define informed search strategies in the context of AI. Difference between Informed and Uninformed search strategies.	10	L2	CO3
	b.	Explain A* algorithm. Give one example where A* is suitable to apply.	10	L2	CO3
OR					
Q.6	a.	Describe the principles of greedy best first search as an informed search strategy. How does it make use of heuristic information?	10	L2	CO3
	b.	Explain the following with examples: (i) Logical Equivalence (ii) Inference Rules (iii) Horn Clauses	10	L2	CO3
Module - 4					
Q.7	a.	Provide examples of how inference can be applied to draw conclusions in a given knowledge base represented FOL.	10	L2	CO4
	b.	Explain the propositional syntax and semantics of First Order Logic (FOL).	10	L2	CO4
OR					
Q.8	a.	Describe the principles of forward chaining in FOL. Provide examples to illustrate how forward chaining works in practice.	10	L2	CO4
	b.	Outline the process of backward chaining in FOL. Provide examples to illustrate how forward chaining works in practice.	10	L2	CO4
Module - 5					
Q.9	a.	Explain the inference using full joint distribution.	10	L2	CO5
	b.	Explain Baye's rule and its use in detail.	10	L2	CO5
OR					
Q.10	a.	Define Expert Systems. Explain the components of Expert System with a neat diagram. Also list its capabilities and incapacibilities.	10	L2	CO5
	b.	Explain: (i) Knowledge Shell (ii) Knowledge Acquisition.	10	L2	CO5

* * * * *