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Third Semester M.Tech. Degree Examination, Dec.2023/Jan.2024
Artificial Intelligence and Expert System in Automation

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 Artificial Intelligence. Explain the importance of AI.	10	L2	CO2
	b.	Briefly explain the history of AI.	10	L3	CO3
		OR			
Q.2	a.	What is an AI agent? Explain the main four rules of AI agents.	10	L2	CO2
	b.	Compare the different types of agents used in AI.	10	L3	CO3
		Module – 2			
Q.3	a.	Differentiate between Breadth-first search and Depth-first search in AI.	10	L3	CO3
	b.	State and explain the advantages and disadvantages of Depth-first search in AI.	10	L2	CO2
		OR			
Q.4	a.	Illustrate the important issues in the design of search programs.	10	L3	CO3
	b.	With an example analyze the problem characteristics in AI.	10	L4	CO4
		Module – 3			
Q.5	a.	What is Hill Climbing? Illustrate the algorithm for simple Hill Climbing.	10	L3	CO3
	b.	Analyze how Steepest-Ascent Hill climbing is different from simple Hill climbing with an example.	10	L4	CO4
		OR			
Q.6	a.	Explain briefly about Best-first search in AI.	10	L3	CO3
	b.	Write a note on problem reduction in AI.	10	L3	CO3
		Module – 4			
Q.7	a.	Explain the representations and mappings in AI.	10	L2	CO2
	b.	Enumerate the approaches to knowledge representation in AI.	10	L3	CO3

		OR			
Q.8	a.	Analyze the issues in knowledge representation with an example.	10	L4	CO4
	b.	Write a short note on the frame problem. Illustrate with an example.	10	L3	CO3
		Module – 5			
Q.9	a.	State and explain the characteristic features of an expert system.	10	L3	CO2
	b.	With a neat sketch, explain the knowledge acquisition process.	10	L3	CO3
		OR			
Q.10	a.	Compare the different types of expert systems?	10	L4	CO4
	b.	Sketch and explain the basic elements of an expert system.	10	L3	CO3

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