Department of Artificial Intelligence and Machine Learning

Date: 15.12.2025	Test – 2	Max. Marks: 10 + 50
Semester: VII	UG	Duration: 2 Hrs.
Course Title: Agentic Artificial Intelligence		Course Code: AI373TA

PART A

S. No	Questions	M	BT	CO
1	List key characteristics of Multi-Agent Systems.	2	1	1
2	What are the advantages of Hybrid Architectures in Agentic Systems?	2	1	1
3	What happens when an agent invokes the tool or function?	2	1	1
4	A user who has recently moved into a new home wants to configure their smart home system for seamless automation and control. When the user initiates the request, the system identifies the top-level goal as "Set up smart home." This goal represents a complex activity that cannot be executed directly and therefore must be broken down into manageable subtasks using a hierarchical planning approach. Provide HTN decomposition tree for the given scenario.	2	3	2
5	Identify the common types of tools used by the agents to enhance their capabilities and perform complex tasks.	2	1	1

PART B

S. No	Questions	M	BTL	CO
1a.	A city traffic management system uses sensors at intersections to collect real-time data on vehicle speed and volume. One module adjusts traffic light timing instantly based on congestion at a specific intersection, while another analyses historical and predicted traffic patterns to plan city-wide light synchronization for the next hour. The system also communicates with an ambulance dispatch system to prioritize green lights along emergency routes. Identify and explain how the three core characteristics of an intelligent agent can be demonstrated by the traffic management system in the scenario above.	6	4	2
1b.	Discuss deliberative architecture of the agentic system.	4	2	2
2a.	An Agentic AI system, consisting of an Agent and Agent Controller, is tasked with answering a user's request: "Tell me about the recent company earnings." The Agent Controller has access to a dedicated external Financial_data_Tool that retrieves the latest quarterly report from a financial API. The Agent's core LLM has not been trained on real-time financial data. For the given scenario write the detailed steps to fetch the financial data.	6	4	3
2b.	Summarize the key properties and characteristics of reactive architectures.	4	2	1
3a.	Illustrate the basic interaction mechanisms in Multi-agent System.	6	3	2

3b.	Write a program to illustrate the use of external tools. Note: Use CrewAI Agentic Framework	4	3	3
4a.	Discuss tool planning flow with a neat diagram.	6	2	2
4b.	Differentiate Less Practical Planning and Moderately Practical Planning Algorithm	4	2	2
5a.	Consider travel planning system with two specialized agents: a Travel Planning Strategist who breaks down travel requests into manageable steps, and a Travel Researcher who validates and finds specific options. Use Crew AI framework that demonstrates planning approach.	6	4	3
5b.	Summarize LLM-based planning algorithm flow.	4	2	2