Roll No.												

PRESIDENCY UNIVERSITY

BENGALURU

Mid - Term Examinations – October 2025

Date: 28-10-2025 **Time:** 11:00am – 12:30pm

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School: SOCSE	**Program**: M.Tech. CSE specialization in Artificial Intelligence	
Course Code : AIE4001	**Course Name:** Artificial Intelligence	
Semester: I	**Max Marks**: :50	**Weightage**: 25%

CO - Levels	**CO1**	**CO2**	**CO3**	**CO4**	**CO5**
Marks	**26**	**24**			

Instructions:

(i) Read all questions carefully and answer accordingly.

(ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 2marks. **5Q x 2M=10M**

1	Define Artificial Intelligence and give one real-world application.	**2 Marks**	**L 4**	**CO1**
2	Explain the difference between goal-based and utility-based agents.	**2 Marks**	**L4**	**CO1**
3	Define Intelligent agent.	**2 Marks**	**L 4**	**CO1**
4	What is a search tree in problem-solving?	**2 Marks**	**L4**	**CO2**
5	Identify the limitations of Depth-Limited Search in problem search.	**2 Marks**	**L 4**	**CO2**

Part B

Answer the Questions. **Total Marks 40M**

6.	**a.**	Trace the historical developments in AI research and justify how each phase influenced modern applications.	**10 Marks**	**L** 4	**CO1**
		Or			
7.	**a.**	Analyze the structure of an intelligent agent and discuss the impact of different environmental properties on its actions.	**10 Marks**	**L4**	**CO1**

8.	**a.**	Differentiate between fully and partially observable, deterministic and stochastic, and episodic and sequential environments.	**10 Marks**	**L4**	**CO1**
		Or			
9.	**a.**	Analyze the types of AI (Narrow AI, General AI, Super intelligent AI) and discuss their societal impact, challenges.	**10 Marks**	**L 4**	**CO1**

10.	**a.**	Explain Depth-Limited Search (DLS) and Iterative Deepening Search (IDS). Discuss a scenario where IDS is preferred over DLS.	**10 Marks**	**L4**	**CO2**
		Or			
11.	**a.**	Explain the Steps to find shortest path in DFS Consider the following graph to Find a path from A to F using DFS. 	**10 Marks**	**L 4**	**CO2**

12.	**a.**	Implement the Greedy Best-First Search algorithm in code and explain the role of the heuristic function.	**10 Marks**	**L** 4	**CO2**
		Or			
13.	**a.**	Explain problem formulation in AI with an example (state space, initial state, actions, goal state).	**10 Marks**	**L 4**	**CO2**