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TERM END EXAMINATIONS (TEE) – December 2021- January 2022

Programme	: B.Tech.	Semester	Fall 2021-22
Course Name	: FUNDAMENTALS IN AI and ML	Course Code	CSA2001
Faculty Name	: Dr. Rakhi	Slot / Class No	D11+D12+D13/0048
Time	: 1½ hours	Max. Marks	50

Answer ALL the Questions

Q. No. Question Description Marks

PART - A (30 Marks)

1 (a) How the “Systems that act rationally” are important for Artificial Intelligence? Also, explain Utility-based agents in the context of rational agents with a diagram. 10

OR

(b) Explain the A* search with an example. What are admissible heuristics and how it is helpful to prove the optimality of the A* algorithm? 10

2 (a) What are Mental Events and Objects? How these are important for the belief system? Explain with the help of a suitable example. 10

OR

(b) Explain the working of the Contract-net protocol in detail. How it is useful for agentifying a system? 10

3 (a) i) What are the bargaining theories involved in Agent communication? 6

ii) How to trace the output in Prolog. Write suitable code and commands in support of the same. 4

OR

(b) Explain the Candidate Elimination Algorithm for calculation of values for the generalized set and specific set using a suitable example. 10

PART - B (20 Marks)

4 i) Explain the problems of Hill Climbing search and the possible solutions to these problems. 3

- ii) What are stochastic games. Explain the Two-Player Zero-Sum game in this context. 3
- iii) Represent the following statements in Predicate Logic: 4
1. Everyone who feels warm either is drunk or every costume they have is warm.
 2. Every costume that is warm is furry.
 3. Every AI student is a CS student.
 4. Every AI student has a robot costume.
- 5 Why it is important to design a learning system for Machine Learning problems. Explain the steps to design the system with a suitable example. 10

