

ASSIGNMENT-1

Subject/ Subject Code	Semester/ Branch	Issue Date	Due Date
Artificial Intelligence / 01CE0702	7 th – C.E(FOT1-MU)	14-08-2024	31-08-2024

1. What is AI and AI techniques? Write a short note on different task domains of AI.
2. Define Production System. Explain the elements of production system and also explain of the characteristics of production system.
3. Enumerate classical “water jug problem”. Describe the state space for this problem. Solve this problem giving its operation sequence.
4. Describe the state space for “Missionaries and Cannibal problem” and solve by giving its operation sequence.
5. What is Hill Climbing? What are the problems in Hill Climbing? Explain Simple Hill Climbing and Steepest scent Hill Climbing?
6. What is A* search technique? How heuristic function is used to find the optimal path in directed graph? Explain it with suitable example.
7. Compare the following:
 - i) BFS and DFS
 - ii) Informed Search and Uninformed Search
8. What is Constraint Satisfaction Problem? Solve the following Crypt arithmetic Problem.

C R O S S
+ R O A D S

D A N G E R

D O N A L D
+ G E R A L D

R O B E R T
9. What is Means Ends Analysis? How this strategy is used in Robotic Arm movement operation? Explain in detail.
10. What do you mean by problem reduction technique? How AO* search is used as heuristic search? Explain with suitable example.