CSC872 Pattern Analysis and Machine Intelligence, Spring 2024
HW #1: (Due in One Week on 2/20)
Lectures 1 - 3
Total of 100 pts (10% of the total course credit)

Name:_____

SID#:_____

1. What are three key concepts for the PAMI framework? (10pt)

2. List four basic components of an artificial intelligence-based agent. (10pt)

3. A rational agent is an example of… (10pt)

> 1) Thinking humanly
> 2) Thinking rationally
> 3) Acting humanly
> 4) Acting rationally

4. You are a play of Backgammon game. Consider yourself as a rational agent. Describe the environment types of this agent. (10pt)

5. What is toy problem? Why should we use it? (20pt)

6. Consider using A* search to find the best way to travel from Arad to Bucharest using the below map and line heuristic. List the correct-ordered and complete sequence of cities to be evaluated and their corresponding evaluation function values f(n). (40pt)

Straight−line distance to Bucharest

City	Distance
Arad	366
Bucharest	0
Craiova	160
Dobreta	242
Eforie	161
Fagaras	178
Giurgiu	77
Hirsova	151
Iasi	226
Lugoj	244
Mehadia	241
Neamt	234
Oradea	380
Pitesti	98
Rimnicu Vilcea	193
Sibiu	253
Timisoara	329
Urziceni	80
Vaslui	199
Zerind	374