

Name: _____

Roll No: _____

Section: _____

Quiz 01 (A)

QUESTION 01: Given below the configurations of simplified Pacman game without ghosts. The objective of the game is to eat all of the dots placed in the maze. The Pacman can move in four directions (up, down, left, and right). Whenever Pacman enters a cell with the dot it immediately consumes it. The Grey cells in the maze are blocked.

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Initial State

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Goal State

Execute the state space search algorithms on the following maze where numbers represent food cells and alphabets represent empty cells. You can build the tree with the current position of Pacman instead of drawing complete states. You should create the nodes from left to right in alphabetical order.

| | | | |
|---|---|---|---|
| ● | D | 1 | 2 |
| A | | E | F |
| B | | 3 | |
| C | 5 | 4 | |

Initial State

| | | | |
|---|---|---|---|
| | D | | |
| A | | E | F |
| B | | | |
| C | | | |

Goal State

Apply Breadth First Search (BFS). Clearly define the path, length and nodes.

QUESTION 02: Scenario: A stock market trader wants to maximize profits by buying and selling stocks at the right time. The trader makes decisions based on various factors, including current stock prices, past trends, financial news, and economic indicators. The trader has a limited budget and must decide which stocks to buy, hold, or sell. If the stock prices drop below a certain threshold, the trader must decide whether to cut losses or wait for recovery. Additionally, the trader considers market volatility, company performance reports, and competitor analysis before making decisions.

1. **Identify the type of agent** this stock trader is.
2. **Identify the type of environment** they operate in.
3. **Create the state space** for this stock trader.