**Question 1(Marks = 30):**

A delivery robot needs to navigate through a 10x10 grid with obstacles to deliver a package from a start point SSS (0,0) to a destination point DDD (9,9).

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| SSS |  |  |  |  |  |  |  |  |  |
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The grid has the following properties:

* The robot can move up, down, left, right, and diagonally.
* Horizontal and vertical movements: Cost = 1.
* Diagonal movements: Cost = 1.5.
* Some grid cells contain obstacles, represented as high-cost cells (Cost = 10). These cells are not impassable but should be avoided if possible.

Apply A\* algorithm to find the optimal path with minimum cost from SSS to DDD.

**Question 2: (Marks = 20)**

You are designing an AI agent for a two-player game played on a 5x5 grid. The players take turns placing their markers (Player A uses "X" and Player B uses "O"). The objective is to maximize the player's score based on the following rules:

1. **Scoring Rules:**
   * Each row, column, or diagonal with exactly three of the player's markers (and no opponent markers) gives **5 points**.
   * Each row, column, or diagonal with exactly four of the player's markers (and no opponent markers) gives **10 points**.
   * A completely filled row, column, or diagonal (5 markers of the player) gives **20 points**.
2. **Game Ends:** The game ends when the grid is fully occupied or when no further scoring opportunities exist.
3. **Special Rule:** If a player blocks an opponent's potential "4 in a row," they gain **3 bonus points.**

**Implement the Min-Max algorithm with alpha beta pruning to solve the problem.**