

Registration No: -----

Section: -----

**Question 1. [DFS]****[8 Points]**

Given the following maze with S marking the start state cell and G marking the goal cell. An intelligent agent can move in this maze either horizontally or vertically while moving along a diagonal is not allowed. Black Cells are blocked and hence an agent cannot move into these cells.

S				G

Show the order of cells expanded and the path returned by the **DFS** algorithm. Mark the start cell as 1 and the next cells as 2, 3, ... to show the order of expanded nodes and mark the path returned by the algorithm on the figure.

Assume that **DFS** is implemented such that it inserts the cells in the **stack** in **UP, LEFT, RIGHT, DOWN** order and cells already visited are not re-visited (Graph Search Implementation).