

PSG COLLEGE OF TECHNOLOGY
DEPARTMENT OF APPLIED MATHEMATICS AND COMPUTATIONAL SCIENCES
M.Sc (TCS) – 15XTEI - ARTIFICIAL INTELLIGENCE

PROBLEM SHEET-I

1. Write a program to perform the following searching strategies:
 - (a) Depth First Search
 - (b) Breadth First Search
 - (c) Depth Limited search
 - (d) Iterative Deepening Search
2. Implement the following heuristic search algorithms
 - (a) A* algorithm
 - (b) Hill Climbing
3. Solve 8 puzzle problem using a suitable search algorithm. The problem is defined as follows:

Consider a 3-by-3 grid with 8 square blocks labelled 1 through 8 and a blank square. Your goal is to rearrange the blocks so that they are in order. You are permitted to slide blocks horizontally or vertically into the blank square. The following shows a sequence of legal moves from an initial board position (left) to the goal position (right). The state space is the specification of each of the eight tiles in the nine squares (the blank is in the remaining square).

Start State

7	2	4
5		6
8	3	1

State space={7,2,4,5,0,6,8,3,1}

Goal State

	1	2
3	4	5
6	7	8

State Space={0,1,2,3,4,5,6,7,8}