GANPAT UNIVERSITY
U. V. PATEL COLLEGE OF ENGINEERING
B.TECH (COMPUTER ENGINEERING/INFORMATION TECHNOLOGY) SEM – VI
FIRST INTERNAL EXAMINATION – FEBRUARY 2021
2CEIT602: ARTIFICIAL INTELLIGENCE

Time:1 Hour   **Total Marks: 20**

Instructions:
1.   Figures to the right indicate full marks.
2.   Be precise and to the point in your answer.

Q.1   Solve the given 8-puzzle problem using BFS technique.   **[5]**

5		8
4	2	1
7	3	6

4	5	8
2	3	1
7		6

Initial State   Goal State

For the given problem:

(i)   Formulate the 8 Puzzle problem according to the State Space Search method.

(ii)   Generate the full BFS Search tree.

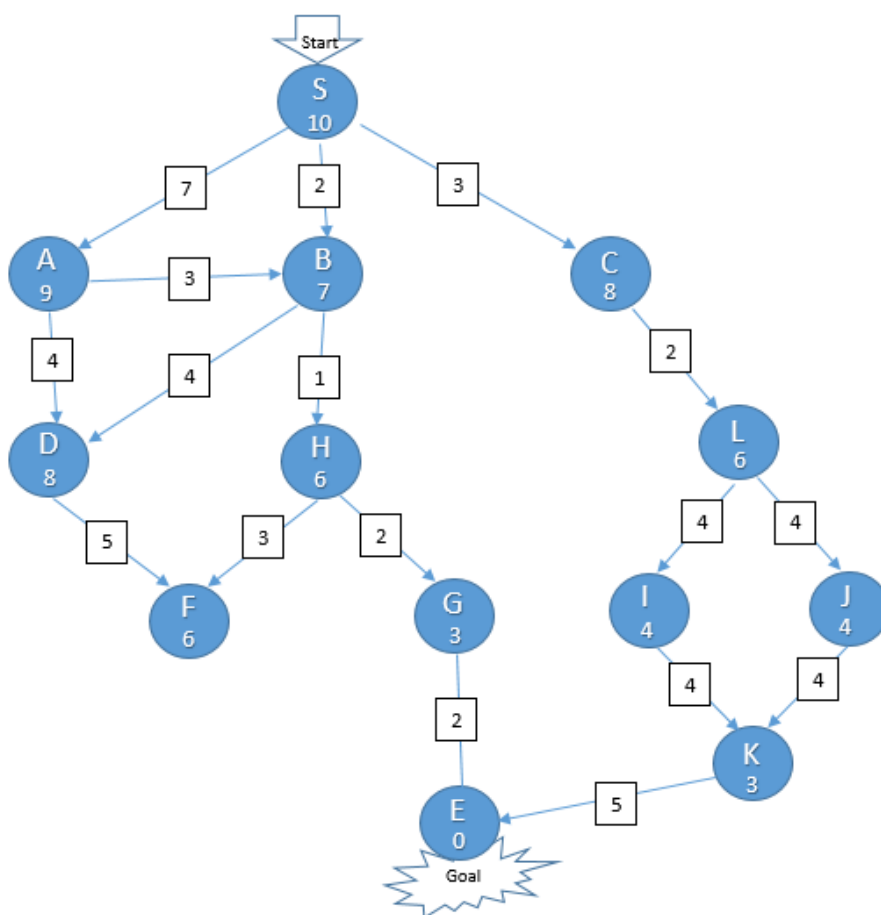(iii)   What will be the path cost to search the goal state?

Q.2   Assume two players, min and max, plays a game. Min player plays first. Generate the tree **[5]** having depth more than five and the number of nodes more than fifteen where a terminal state is for max player.

Apply the minimax algorithm on the generated tree and discuss it in detail.

Q.3   In the following image, rounded circle is node and initial node is **S** and Goal Node is **E** **[6]** and heuristic value is written inside the node and path cost value is written on the edge between two nodes. Reach the goal node from Initial node by using Best First Search algorithm by writing down an Open and closed list for each & every step. Write down path and path cost.

Q.4   Convert Following statements into First order predicate logic: **[4]**

1.   Some students failed in the AI subject.

2.   Every husband respects his wife.

3.   Mehsana is located in Gujarat.

4.   Meeta likes everybody so everybody likes Meeta.

END OF PAPER