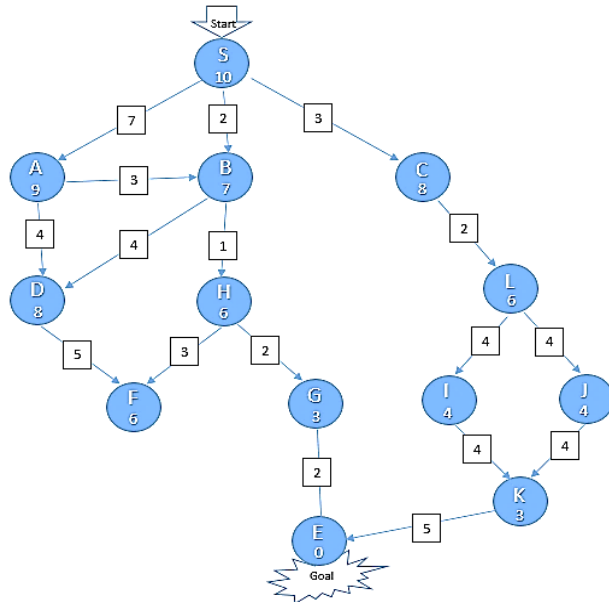**GANPAT UNIVERSITY**
**U. V. PATEL COLLEGE OF ENGINEERING**
**B. TECH (COMPUTER ENGINEERING/INFORMATION TECHNOLOGY/ COMPUTER ENGINEERING-ARTIFICIAL INTELLIGENCE)**
**SEM – VI FIRST INTERNAL EXAMINATION – MARCH 2022**
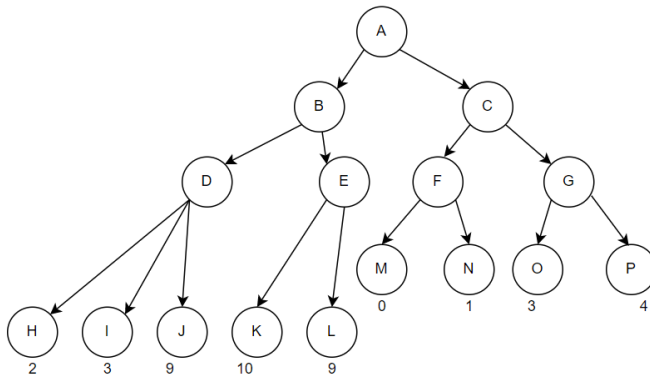**2CEIT602: ARTIFICIAL INTELLIGENCE**

**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** In the following image, the rounded circle is representing a node, an initial node is S and Goal node is E, 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. **[5]**



**Q.2** Discuss alpha beta pruning for game playing. In the given image, the circle is representing the nodes. Assume that the root node is representing the max player. Apply alpha pruning on the given tree. Also show the alpha and beta values of each node in a sequence. **[5]**



**Q.3** You have given two jugs having the capacity of 8-liter and 5-liter. There is a pump from which you can pour unlimited water into the jug. There are no any measuring marks given on the jug. How will you get exactly 4-liter of water in the 8-liter jug in minimum steps? Solve it using breadth first search. Also write the rules of the given problem. **[5]**

**Q.4** Answer following Questions: **[5]**

1. Draw Rule based Expert System Architecture
2. Draw Flow chart of Genetic Algorithm

**END OF PAPER**