



**Parul Institute of Technology, Limda, Vadodara**

**Subject:** Artificial Intelligence (303105307)

**Course:** B.Tech

**Year & Sem:** B.Tech Sem-V

**Branch:** Artificial Intelligence

## Assignment# 1

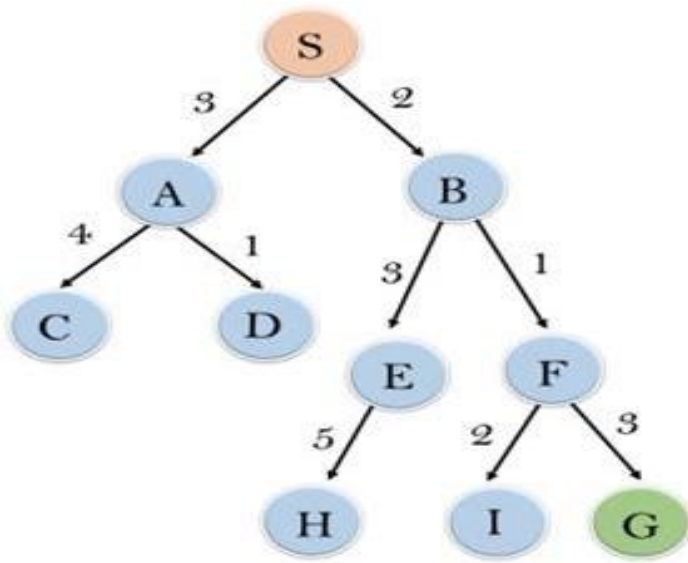
1. Describe major areas of Artificial Intelligence.
2. List out applications of AI.
3. Explain AI techniques.
4. Explain production system with neat diagram.
5. List out the characteristics of problem.
6. How can a problem be defined as State Space Search? Explain with a suitable example.
7. What is the future scope of AI?
8. How AI is helpful in the field of medical and e-commerce?
9. Which are the issues in designing Search algorithm?
10. Briefly explain the concept of a heuristic function in search algorithms. How does it affect the search process?
11. What is the AO\* algorithm, and how does it differ from traditional search algorithms like A\*?
12. Differentiate DFS and BFS.
13. List out and explain disadvantages of hill climbing with neat diagram.

### Long Question:

1. Explain Best First Search algorithm with a suitable example?
2. Explain Constraint satisfaction with a suitable example?
3. Demonstrate the technique of Means-End Analysis with an example. Discuss its potential applications along with disadvantages in detail.
4. What is an intelligent agent? Describe basic kinds of agents program.
5. Write the brief notes on the following
  - i) 8-Puzzle Problem
  - ii) Hill climbing search.
6. Describe A\* search technique.
7. What do you mean by breadth-first and depth-first search strategies.
8. Explain water jug problem.
9. Explain Blocks world problem of hill climbing.

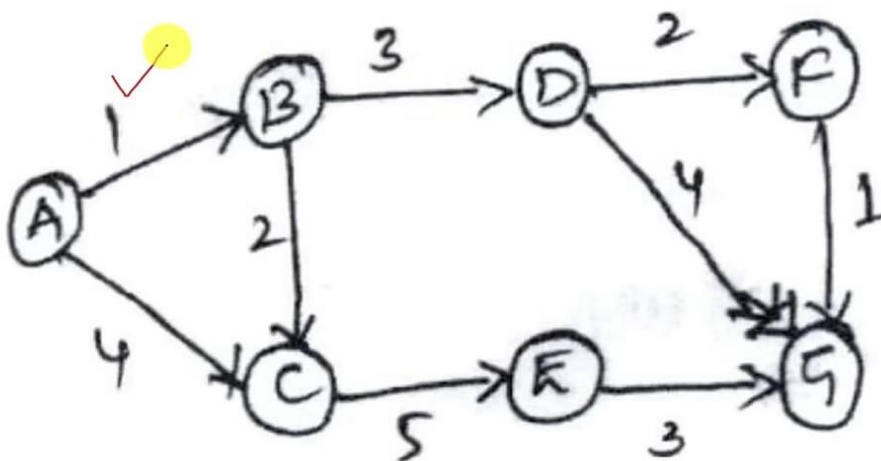
Sums:

1. Find the path with cost of the following problem using best first search.



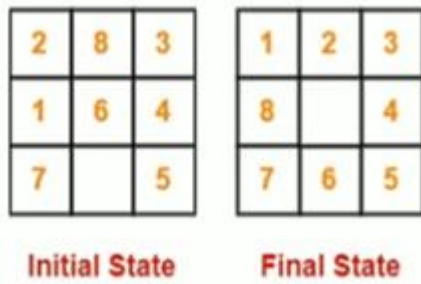
node	H (n)
A	12
B	4
C	7
D	3
E	8
F	2
H	4
I	9
S	13
G	0

2. Find the path with cost of the following problem using A\* algorithm.

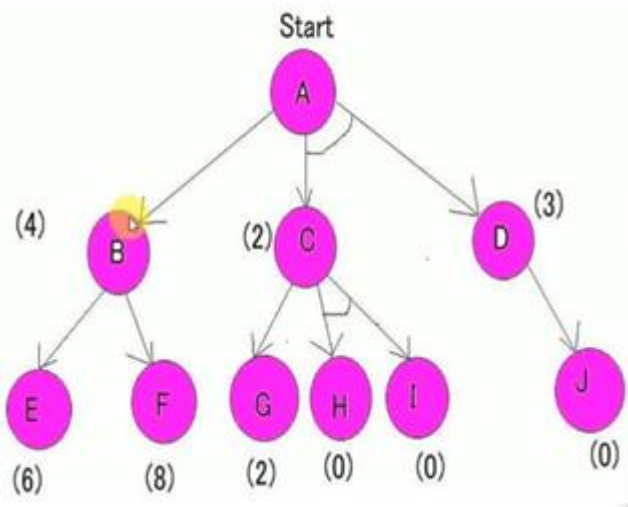


A	5
B	6
C	4
D	3
E	3
F	1
G	0

3. Solve 8 puzzle problem with A\* algorithm.



4. Solve the following problem using AO\* algorithm.



5. Solve the following problem using CSP.

SEND

+ MORE

---

MONEY