AMITY SCHOOL OF ENGINEERING AND TECHNOLOGY
MID TERM EXAMINATION (February-March, 2022)
[B. Tech- AI (IV), B. Tech CSE/IT (VI)]
[Artificial Intelligence- CSE401]

Time 1 Hr **Max. Marks:30**

SECTION-A ***(Attempt any two questions out of three. Each question carries 06 marks)***

1. Solve the following problem using constrained satisfaction method: O N E + TWO = W I T T

2. You have three jugs, measuring 12 gallons, 8 gallons, and 3 gallons, and a water tap. You can fill the jugs up or empty them out from one another or onto the ground. You need to measure out exactly one gallon i.e. a jug (any one) has 1 gallon of water in it and the other jugs are empty. Give the complete state space and set of all applicable/feasible rules to solve this problem

3. Write various Knowledge Representation issues. Provide the solution of any of two issues.

SECTION-B ***(Attempt any two questions out of three. Each question carries 06 marks)***

4. Determine whether the semantic of each of the following propositional logic are : (a) Satisfiable (b) Valid

P1: $(A \wedge B) \vee \neg (A \vee B)$, P2: $(A \wedge B) \rightarrow (A \vee \neg B)$

5. Translating following sentences into Predicate Logic:

i. Not Every gardener likes the sun.

ii. You can fool some of the people all of the time.

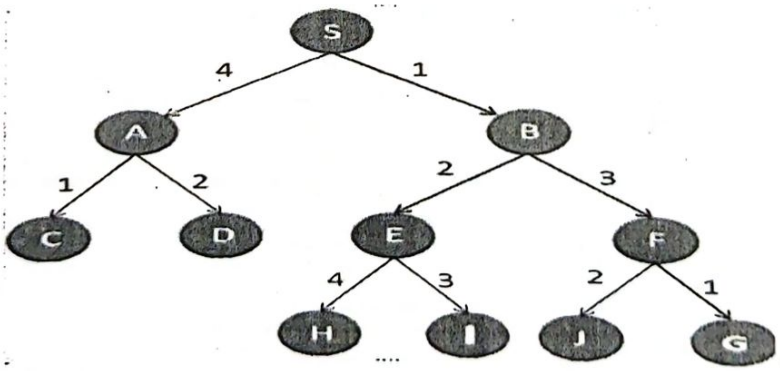
iii. Everyone is younger than his father.

iv. Anything anyone eats and isn't killed by food.

v. All Romans were either loyal to Caesar or hated him.

vi. Every one has a father.

6. Consider the following graph. Traverse the goal node by using Best First Search Approach. Write each steps clearly. Mention the list of closed and open node also. Start node is 'S' and goal node is 'G'.



Section - C*: *Compulsory question (Case Study Based) (06 marks)

How can you say that problem reduction approach is useful in searching of goal node. Justify the statement with facts. Solve following problem using AO* algorithm. Write each steps clearly. (1+5)