



Department of Computer Science and Engineering  
CAT 1 Question Paper

Programme : B.TECH

Subject : Artificial Intelligence

Time : 90 Minutes

Subject code :

Max Marks : 50

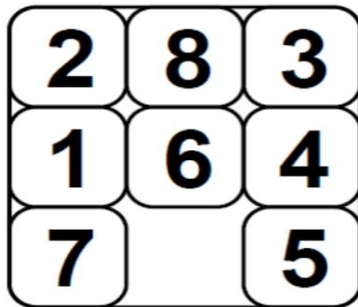
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**PART-A**

Answer **ALL** Questions

1. Formulate the following problems using standard problem formulations (Initial state, Successor function, path cost, total path cost and Goal test):

(a) 8 puzzle problem with initial state given below

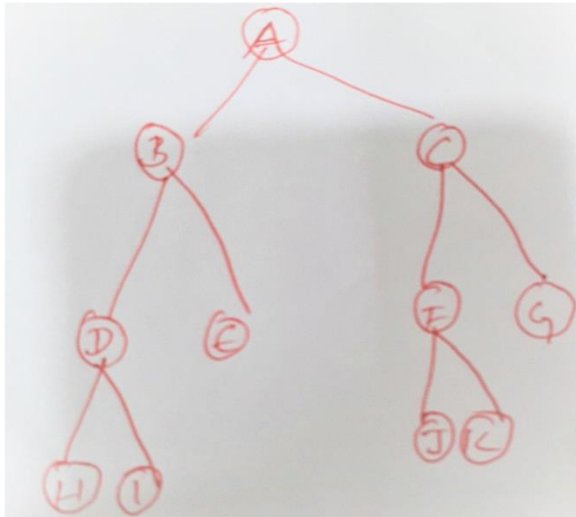


(b) 4 queens problem

2. Explain production systems with the help of production rules. Write production rules for water jug system.
3. Explain Constraint Satisfaction Problem(CSP) in artificial intelligence. Prove CSP for

$$\begin{array}{r} \text{S E N D} \\ + \text{M O R E} \\ \hline \text{M O N E Y} \end{array}$$

4. Explain five differences between Informed and uninformed search. Give two examples of Informed and uninformed search.



5. Write the BFS and DFS traversal for the tree which has initial state as node A and goal as node J