Computer Algorithm

Tutorial No. – 5 on Unit IV

1. Explain general backtracking method

   Write note on "Backtracking"
2. Define a. Implicit Constraints b. Explicit Constraints
3. Explain solution to n-queens problem using Backtracking method
4. State n-queens problem and write an algorithm to test that no two queens are placed in same diagonal

   Write algorithm to place n non-attacking queens on a chessboard of size n x n using Backtracking Approach.
5. Draw and explain state space tree /Permutation tree/Tree organization for 4 queen problem
6. With suitable example explain sum of subsets problem using Backtracking method

   Explain Backtracking solution to sum of subset problem

   Explain sum of subset problem and bounding functions used in solution to sum of subsets using backtracking

   Write algorithm to find subset of elements giving sum=m using Backtracking Approach.
7. Draw possible solution space organization diagram for sum of subset problem
8. Explain solution to 0 /1 Knapsack problem using Backtracking method

   Write algorithm to solve 0/1 Knapsack problem using Backtracking Approach
9. Write note on Graph coloring problem

   Give backtracking solution to Graph coloring problem

   Write algorithm to color vertices of a graph with unique colors from adjacent vertices using Backtracking Approach.
10. Write note on Hamiltonian Cycle

    Give backtracking solution to Hamiltonian Cycle.

    Write algorithm to find Hamiltonian Cycle using Backtracking Approach.

11. Explain the following terms with suitable example
    a. Live node
    b. E-node
    c. Dead node
    d. Bounding Function