**CAT2 Important questions**

**Part A**

|  |
| --- |
| 1. State the application of Huffman’s tree? |
| 1. What is Knapsack problem using greedy approach? |
| 1. Write the general procedure of dynamic programming. |
| 1. What is the formula for binomial coefficient? |
| 1. What is transitive closure? |
| 1. Define Optimal binary search tree. |
| 1. List out the memory functions under dynamic programming. |
| 1. What are the applications of backtracking? |
| 1. Differentiate explicit and implicit constraints. |
| 1. Why 2 queens problem is not solvable? Justify your answer. |
| 1. What is the principle behind branch and bound technique? |
| 1. Define P and NP Problem. |
| 1. What is the purpose of Huffman’s tree? |
| 1. Write the greedy strategy of knapsack problem. |
| 1. How dynamic programming approach is used to solve binomial coefficient problem? |
| 1. State the 0/1 Knapsack problem. |
| 1. Give any two properties of dynamic programming approach? |
| 1. Define OBST. |
| 1. What does Floyd’s algorithm do? |
| 1. What is State space tree? |
| 1. What is the difference between live node & dead node? |
| 1. Define Hamiltonian problem. |
| 1. Differentiate Backtracking & Branch and Bound. |
| 1. What is non- deterministic polynomial time? 2. Write the algorithm to compute the binomial co-efficient using Dynamic Programming algorithm design technique. 3. Write the algorithm to compute the transitive closure of a graph. |

**Part B**

Unit 3-

Huffman Trees, Fractional Knapsack Problem\

Unit 4-

Warshall‟s and Floyd‟s Algorithms - Optimal Binary search trees – 0/1 Knapsack Problem and Memory functions

Unit 5-

Backtracking- n-Queens problem - Hamiltonian Circuit Problem - Subset Sum problem - Branch and Bound – 0/1 Knapsack problem - Traveling Salesman Problem