**CAT2 Important questions**

**Part A**

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