**PSG COLLEGE OF TECHNOLOGY**

**DEPARTMENT OF COMPUTER APPLICATIONS**

**II SEM MASTER OF COMPUTER APPLICATIONS**

**23MX22- DESIGN AND ANALYSIS OF ALGORITHMS**

**Answer the following questions :**

1. Give the difference between binary search tree and heap.
2. What is the complexity of searching in binary search tree.
3. Give the form of binary search tree which could give the best and worst case complexity
4. What is the difference between binary search tree using array and tree ?
5. Define omega, theta and big oh notations. What are the significance of these notations ?
6. Write a simple code segment whose complexity is O(log n), O(nlog n) and O(n2).
7. How can you guarantee log n complexity for search operation in a binary search tree ?
8. How do you represent a graph in a storage ?
9. Define the following :
10. Connected graphs
11. Euler’s Circuit
12. Hamiltonian cycle.
13. What is an optimisation problem? Give a formal description of the following optimisation problems.
14. Knapsack problem
15. Travelling salesperson problem
16. Single source shortest path.
17. All pairs shortest path.