

SECTION-D

7. Explain P, NP, NP-Complete and NP-Hard Problems with two examples for each class of problems.
8. What are the different techniques for graph traversal? Discuss and differentiate between them. Also explain the applications of each.

SECTION-E

9. Answer briefly :

- a) What is an algorithm?
- b) What are the different orders of growth?
- c) Define Hashing.
- d) What is Selection sort? What is its complexity?
- e) Differentiate between linear search and binary search algorithms.
- f) What is an AVL tree?
- g) What is pruning in backtracking?
- h) Explain the Dijkstra's algorithm for shortest path in a graph.
- i) Explain Divide-and-conquer approach with an example.
- j) Show that Quick Sort algorithm takes $O(n^2)$ time in the worst case.

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