14PCSCT2004 - PCS/CT/2004

M.SC. DEGREE EXAMINATION, APRIL 2018
I YEAR - II SEMESTER
Core Major Paper IV-DESIGN AND ANALYSIS ALGORITHMS

Time : 3 Hours **Max.marks :75**

Section A $(10 \times 2 = 20 marks)$

Answer any **TEN** questions

1. What is an algorithm?
2. Define big oh notation.
3. Write the straight forward max and min algorithm.
4. Define divide and conquer method.
5. What is a directed graph?
6. Define multistage graph.
7. What is a spanning tree.
8. What is a planar graph?
9. Define Hamiltonian cycle.
10. What is meant by branch and bound?
11. Draw comparison tree for two searching algorithm.
12. Define nondeterministic algorithm.

Section B $(5 \times 5 = 25 marks)$

Answer any **FIVE** questions

13. Write short notes on space and time complexity.
14. Write the algorithm for primality testing first attempt.
15. Explain KNAPSACK problem.
16. Distinguish DFS vs BFS
17. Write the Bellman and Ford algorithm to compute shortest path.
18. Write short notes on graph colouring.
19. Discuss the basic concepts of NP hard and NP complete problems.

P.T.O

Section C $(3 \times 10 = 30 marks)$

Answer any **THREE** questions

20. Discuss pseudo code conventions.
21. Discuss about Quick sort using Divide and conquer method.
22. Explain about 0/1 knapsack problem.
23. Discuss Travelling Salesperson Problem.
24. Describe the oracles and adversary arguments.