NOVEMBER/DECEMBER 2018

MCS34 — DESIGN AND ANALYSIS OF ALGORITHMS

Time : Three hours   Maximum : 75 marks

SECTION A — (5 × 6 = 30 marks)

Answer ALL questions.

1. (a) Discuss the time space tradeoff related to algorithms.

Or

(b) What are recurrence equations? Explain.

2. (a) Write the Control abstraction for divide-and-conquer method and its time complexity.

Or

(b) Write and explain the Straight forward maximum and minimum algorithm.

3. (a) Define Dynamic programming. Give some examples which can be viewed as Dynamic programming method.

Or

(b) Write the function to compute lengths of shortest paths.

4. (a) Give a short note on backtracking method.

Or

(b) What is a Hamiltonian cycle? Explain.

5. (a) Explain the connected component.

Or

(b) What is branch and bound? Explain.

SECTION B — (3 × 15 = 45 marks)

Answer any THREE questions.

6. Give a detailed account on the analysis of linear search.

7. Elaborate on the binary search algorithms.

8. Write and explain the minimum-cost binary search tree algorithm.

9. Discuss in detail about the graph coloring method.

10. Explain the spanning trees in detail with example.

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