[Total No. of Questions: 09]   [Total No. of Pages: 01]

Uni. Roll No. …………….

Program: B.Tech.

Semester: 6th

Name of Subject: Design and Analysis of Algorithms

Subject Code: PCIT-113

Paper ID: 17205

01-07-21(E)

Time Allowed: 02 Hours   **Max. Marks: 60**

NOTE:

1) Each question is of 10 marks.
2) Attempt any six questions out of nine.
3) Any missing data may be assumed appropriately.

Q1.   Compare the working and performance of greedy and backtracking techniques for solving Knapsack Problem.

Q2.   Illustrate the use of 'principle of optimality' in dynamic programming by applying it on multistage graph problem.

Q3.   Compare the techniques and efficiency of Boyer-Moore and Rabin-Karp string matching algorithms.

Q4.   Defend the statement that all NP-complete problems are NP-hard, but some NP-hard problems are not NP-complete.

Q5.   Appraise the computational methods used by the various categories of approximation algorithms for generating approximate solutions.

Q6.   Design a recursive algorithm that finds the sum of all elements of an array and analyze the time complexity of this algorithm.

Q7.   Evaluate the efficiency of an algorithm involving dynamic programming to solve all-pairs shortest path problem.

Q8.   Examine the best and worst cases of Quicksort algorithm by performing its detailed time complexity analysis.

Q9.   Test the performance of a recursive algorithm that finds the maximum and minimum items in a set of *n* elements against a straightforward method for the same.

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