

Sardar Vallabhbhai National Institute of Technology, Surat

Design and Analysis of Algorithms

Mid Semester Examination September 2017

Exam Date : 18/9/2017

Exam Time : 2:00 PM to 3:30 PM

Total Marks : 30

Instructions :

1. Write your roll no. and other necessary details clearly on Answer book and Question Paper.
 2. Assume necessary data but give proper justification.
 3. Be precise and clear in answering all questions.
 4. Figure to the right indicate full marks of that question.
 5. Please start answer to new question on new page.
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Q-1 Answer the Following [Any 4]

[8]

- 1) Define the asymptotic notation Theta
- 2) Define the divide and conquer method.
- 3) Define worst-case step count.
- 4) Define average step count.
- 5) Write an algorithm using Recursive function to find sum of n numbers.

Q-2 Answer the Following

[12]

- 1) Write the Control abstraction for Divide-and conquer.
- 2) Define optimal solution?
- 3) Describe the recurrence relation of merge sort?
- 4) Write an algorithm for straightforward maximum and minimum

Q-3 Answer the Following

[10]

- 1) Explain in detail Monotonous Increasing Sequence Problem
- 2) Explain Longest Subsequence problem and give algorithm for it.

ALL THE BEST!