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SEAT No. :

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TE/INSEM/APR-49

T.E. (Computer)

310250 : DESIGN & ANALYSIS OF ALGORITHMS

(2015 Pattern) (Semester - II)

Time : 1 Hour]

[Max. Marks : 30

Instructions to the candidates:

- 1) Figures to the right indicate full marks.
- 2) Assume suitable data, if necessary.

Q1) a) Explain means of improving efficiency of Algorithm. [5]  
b) What is need of correctness of algorithm? What is loop invariant property? [5]

OR

Q2) a) What are Algorithms? Explain algorithm as technology with example. [5]  
b) Discuss issues related to iterative algorithm design. [5]

Q3) a) Give a linear time algorithm for fractional knapsack problem. Analyze the same. [5]

b) Explain the importance of Tail recursion with a suitable example? [5]

OR

Q4) a) Explain imperative model in detail. [5]  
b) Obtain set of optimal Huffman codes for set of characters S= (a, b, c, d, e, f) with following frequency of occurrences P = (5, 25, 7, 15, 4, 12). Draw the decode tree for this set of codes. [5]

Q5) a) Write a short note on Evolutionary Computing and Genetic Algorithm. [5]

b) Solve multiplication using Divide and Conquer strategy 1234\*2139. [5]

OR

Q6) a) What is LCS for following using Dynamic Programming, String 1 = "ABCDGH" and String 2 = "AEDFHR". [5]

b) Explain branch-n-bound approach. [5]

