(DCS 314)

B.Tech. DEGREE EXAMINATION, MAY - 2015

(Examination at the end of Third Year)

COMPUTER SCIENCE & IT

Paper - IV : Design & Analysis of Algorithms

Time : 3 Hours **Maximum Marks : 75**

Answer question No.1 compulsory ***(15)***

Answer ONE from each unit ***(4 × 15 = 60)***

1) Write short notes on :

a) Performance analysis.

b) Control abstraction for divide & conquer.

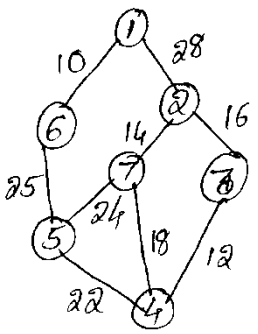
c) Flowshop scheduling.

d) Articulation point

e) Non Deterministic algorithms

UNIT - I

2) Obtain minimum cost spanning tree for the given graph using Prim's algorithm.



OR

3) Explain quick sort algorithm with example.

UNIT - II

4) Write an algorithm of O/I knapsack problem in Dynamic programming, Also obtain optimal solution for the given knapsack instance :

$n = 3$, $(w_1, w_2, w_3) = (2, 3, 4)$, $(P_1, P_2, P_3) = (1, 2, 5)$ and $m = 6$.

OR

5) Explain travelling sales person problem with example.

UNIT - III

6) Explain Graph coloring Algorithm and generate state space tree for mcoloring when n = 3 and m = 3.

OR

7) Let n = 6, m = 30 and w[1 : 6] = {5, 10, 12, 13, 15, 18}. Find all possible subsets and generate state space tree using Sum of subsets algorithm.

UNIT - IV

8) Discuss about FIFO branch and band & LC branch and band.

OR

9) State and prove cook's theorem.

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