

**STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086**  
**(For candidates admitted during the academic year 2009–10 & thereafter)**

**SUBJECT CODE : MT/PE/AP13**

**M. Sc. DEGREE EXAMINATION, NOVEMBER 2010**  
**BRANCH I - MATHEMATICS**  
**FIRST SEMESTER**

**COURSE : ELECTIVE**  
**PAPER : ALGORITHMS AND PROGRAMMING**  
**TIME : 3 HOURS**

**MAX. MARKS : 100**

**SECTION – A**

**COMPUTER ASSISTED TESTING**

**Answer all the questions: (30x1=30)**

**THEORY**

**Answer any five questions: (5x8=40)**

1. Explain divide and conquer strategy with an example.
2. Explain quick sort algorithm with suitable example.
3. What are selections? Discuss briefly.
4. Write and explain an algorithm to solve knapsack problem.
5. Write an algorithm to find the minimum cost spanning tree of a given graph. Use the algorithm to find the same for the following graph.
6. What is dynamic programming? Use the same for solving the travelling salesman problem.
7. Write the backtracking algorithm for the eight queens problem. Draw the state space tree.
8. State is multipage graph problem. Write and explain an algorithm to find solution to the same.

**SECTION – B**

**PRACTICAL**

**Answer any two questions: (2x15=30)**

1. Write a program to arrange the elements of an array in ascending order using Merge sort.
2. Write a program to solve eight queens problem.
3. Write a program to find marks range (maximum – minimum) of your class in Algorithms paper.

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