4. a) Describe Optimal merge patterns

OR

b) Give an example of OBST

5. a) Discuss about Push Down Automata

OR

b) Describe Context Free Grammars

6. a) Explain AND/OR graph decision problem (AOG)

OR

b) What is Turing Machine? Explain the concept of Turing machine with example

[Aug-11]

[SPDCA-205]

MCA DEGREE EXAMINATION

II YEAR

DESIGN AND ANALYSIS OF ALGORITHMS

(Effective from the admitted batch 2009-10)

Time: 3 Hours **Max.Marks: 70**

Instructions: All parts of the unit must be answered in one place only.
Figures in the right hand margin indicate marks allotted.

SECTION-A

1. Answer any **Four** of the following: (4x5=20)

a) Describe pseudo code conventions
b) Explain space complexity with example
c) Write iterative Binary search algorithm
d) Describe Divide and Conquer strategy
e) Give an example of Kruskal's algorithm
f) Describe reliability design
g) Explain regular languages
h) Describe NP-Hard problem

SECTION-B

Answer all questions (5x10=50)

2. a) Discuss about Stacks and Queues

OR

b) Explain Towers of Hanoi Problem. Write recursive algorithm for this problem

3. a) Explain Quick Sort algorithm with example

OR

b) Explain breadth-first search and traversal