LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

M.Sc. DEGREE EXAMINATION – COMPUTER SCIENCE

SECONDSEMESTER – APRIL 2018

CS 2824- DESIGN & ANALYSIS OF ALGORITHMS

Date: 27-04-2018   Dept. No.   Max. : 100 Marks
Time: 01:00-04:00

Section – A (10 X 2 == 20 Marks)

Answer all Questions

1. Define an algorithm.
2. What do you mean by an efficiency of an algorithm?
3. Define a Binary tree.
4. What do you mean by a greedy technique?
5. What is Depth first search?
6. Define Binary search tree.
7. What is Hamiltonian circuit?
8. What do you mean by a State space tree?
9. Define NP complete Problems.
10. What is an exact algorithm?

Section – B (5 X 8 == 40 Marks)

Answer all Questions

11 a).Discuss the fundamental steps in algorithmic problem solving.

Or

  b).Explain the Asymptotic notation.

12 a). Explain the kruskal's algorithm.

Or

  b). Explain the Merge sort with example.

13 a). Explain about Computation of binomial coefficient.

Or

  b). Explain the construction of optimal binary search tree with an example.

14 a). Write a procedure to solve 4-queen problem using backtracking.

Or

  b). What is subset sum problem? Write a procedure to solve subset sum
    problem using backtracking.

15 a). Write about P, NP and NP complete problems.

Or

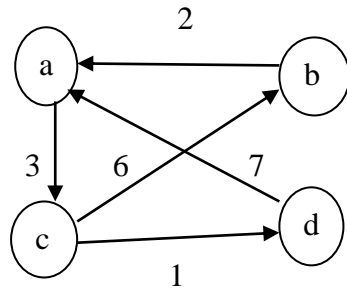 b). Write the procedure to solve knapsack problem using approximation
    algorithm.

Section – C (2 X 20 == 40 Marks)

Answer any TWO Questions

16 a). Explain in detail the principal steps in mathematical analysis of recursive
algorithm with Example.

   b). Explain the Prim's algorithm with an example.

 17 a). Apply the Floyd's algorithm to the following graph and explain it

   b) Discuss in detail about Assignment problem.

18 a). Explain with an example the Twice-around- the-tree algorithm.

   b). Explain in detail the binary tree traversal with an example.

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