LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – MATHEMATICS

SIXTH SEMESTER – APRIL 2016

MT 6602 - DATA STRUCTURE & ALGORITHM

Date: 21-04-2016   Dept. No.   Max. : 100 Marks
Time: 09:00-12:00

PART A

Answer ALL questions   **10 x 2 = 20**

1. What is pseudocode?
2. Define composite data type.
3. What is sequential search?
4. Mention the three variations of sequential search.
5. Define a linear list.
6. What is metadata?
7. Define Fibonacci series recursively.
8. Define stack top.
9. What is sort efficiency?
10. Define shell sort.

PART B

Answer any FIVE questions   **5 x 8 = 40**

11. Write a short note on Statement constructs.
12. Write the algorithm for sequential search.
13. Explain the ADT implementations on linked list.
14. Write an algorithm to convert a decimal number to a binary number.
15. Explain briefly about Queue operation.
16. Write a program to find the factorial of a given number iteratively.
17. Explain the straight insertion sort with example.
18. Define binary tree and write a short note on two binary tree traversals

PART C

Answer any TWO questions   **2 x 20 = 40**

19. Write the algorithms of Sentinel search and Probability search.
20. What is backtracking? Explain eight queens problem and write its algorithm.
21. Explain create, push and pop stack with its algorithm.
22. Write the algorithms of Selection sort and Heap sort and also discuss their efficiency.

****