



B.E DEGREE EXAMINATIONS: JUNE 2015

(Regulation 2009)

Second Semester

CSE102 : DATA STRUCTURES

(Common to CSE/IT)

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. Top down approach is
 - a) Modular programming
 - b) Unstructured
 - c) Object oriented programming
 - d) Agile programming
2. Which is the time complexity of matrix multiplication
 - a) $O(\log N)$
 - b) $O(N^3)$
 - c) $O(N^2)$
 - d) $O(N)$
3. Usually Linked list is implemented using
 - a) Dynamic memory allocation
 - b) Static memory allocation
 - c) Priority queue
 - d) Binary tree
4. Linked list application is
 - a) Parenthesis matching
 - b) Polynomial addition
 - c) Ticket reservation
 - d) Infix to postfix conversion
5. Stack and linked list are
 - a) Linear and non-linear data structures
 - b) Both are linear
 - c) Non- Linear and Linear data structures
 - d) Both are non-linear
6. FIFO principles are followed by
 - a) Queue
 - b) Stack
 - c) Tree
 - d) Linked list
7. Binary Search tree time complexity is
 - a) $O(\log N)$
 - b) $N * O(\log N)$
 - c) $O(N \log N)$
 - d) $O(\log N^2)$
8. Which traversal is the best suited one?

(OR)

- b) (i) Write an algorithm to two polynomial additions (7)
(ii) What do you mean by Josephus Problem? Write a note on it. (7)

23. a) Write any four basic operations on queue and explain

(OR)

b) Explain and write an algorithm to do any two stack applications

24. a) Write an algorithm for the following:

- Create AVL tree with all subroutines
- Insert an item
- Delete an item

(OR)

- b) (i) Write a note on priority queue (7)
(ii) Write an algorithm to create a binary search tree with an example (7)

25. a) (i) Explain any two external sorting methods (7)
(ii) Write an algorithm to do binary search. (7)

(OR)

b) Write an algorithm to do quick sort. Explain the steps involved in sorting
23,45,67,12, 48 345, 78 134 and 400
