Reg. No.														

B.Sc. DEGREE EXAMINATION, NOVEMBER 2018

Second Semester

UCS15202 – DATA STRUCTURES

(For the candidates admitted during the academic year 2015-2016 to 2017-2018)

Time: Three hours Max. Marks: 100

Answer **ALL** Questions

PART – A (10 × 2 = 20 Marks)

1. What is Big-O notation? Give example.
2. What is Recursion?
3. Distinguish between stack and queue.
4. What are the applications of Queues?
5. Define: Binary tree.
6. Define: Tree.
7. Why is there a need for sorting
8. What is bubble sort?
9. How to traverse a graph?
10. What is Spanning Tree?

PART – B (5 × 16 = 80 Marks)

11. a. How to represent a polynomial in a singly linked list? Explain.

(OR)

b. Discuss the operations on linked lists.

12. a. Explain the various operations performed on a circular queue.

(OR)

b. Explain how an element is inserted into the queue.

13. a. What are the various applications of binary trees?

(OR)

b. Write the algorithms to perform binary tree traversal.

14. a. Perform quick sort on the data.
12 43 90 33 45 10 09 56 534.

(OR)

b. Explain the Merge sort algorithm in detail.

15. a. Explain Depth first searching in detail.

(OR)

b. Write an algorithm to determine the shortest path in a graph.

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