



END OF SEMESTER EXAMINATIONS, NOVEMBER – 2017
DATA STRUCTURES AND ALGORITHMS
SUBJECT CODE: 11UACA19

MAJOR: B.C.A
TIME : 3 HOURS

SEMESTER: III
MAX.MARKS: 75

SECTION-A (5 x 2 = 10)

Answer ALL the Questions:

1. Define: Data Structure.
2. Name the two ways of representing Linear Structures in Memory.
3. Define: Stack.
4. What is the maximum number of Edges in any 'n' vertex Undirected Graph?
5. What do you mean by Collision?

SECTION-B (5 x 4 = 20)

Answer ALL the Questions:

6. a) Describe about the Control Structures used in algorithms.

(OR)

- b) Describe about the complexity of algorithms.

7. a) How do you represent Linear Arrays in Memory.

(OR)

- b) Write a note on Garbage Collection.

8. a) Write a procedure to insert an item into a Queue.

(OR)

- b) What is Recursion?. Write a Recursive Procedure for Factorial calculation.

9. a) Write the procedure for Traversing Binary Tree.

(OR)

- b) How do you represent a Graph by using Adjacency Matrix.

10. a) Describe about Insertion Sort.

(OR)

- b) Write a note on Radix sort.

SECTION-C (3 x 15 = 45)

Answer any THREE Questions:

11. Explain about Algorithmic Notations.
12. Write a procedure to insert an item into a Linked List after a given Node.
13. Explain about the procedure for Towers of Hanoi Problem.
14. Explain the Shortest Path Algorithm with an example.
15. Describe about Hashing.
