Exam. Code: 0029
Sub. Code: 0934

1128

Bachelor of Computer Applications

3rd Semester

BCA-302: Data Structures

(Old: 2016-17)

Time allowed: 3 Hours | Max. Marks: 90

NOTE: *Attempt five questions in all, including Question No. IX (Unit-V) which is compulsory and selecting one question each from Unit I-IV. Use of non-programmable calculator is allowed.*

-*-*-*-

UNIT-I

I. (a) What is the importance of Data-Structures? Explain its various operations.

(b) How arrays are represented in memory? Give its various types with examples. (9+9)

II. (a) How do you compute the complexity? Explain. Also explain various applications of data-structures.

(b) Compare and contrast Stacks and Queues with examples. (9+9)

UNIT-II

III. (a) Define linked list. Explain various operations with suitable examples.

(b) How polynomials are manipulated using linked lists? Explain. (9+9)

IV. (a) How elements of linked lists are searched for the given item? Explain through example.

(b) Explain about doubly linked lists. (9+9)

UNIT-III

V. (a) Draw difference between Binary Trees and Binary Search Trees with examples.

(b) What is Tree? How are they represented in contiguous storage? (9+9)

VI. (a) Define Binary Tree. How insertion and deletion is performed Binary Trees? Explain with example.

(b) Explain AVL Trees in detail. (9+9)

P.T.O.

UNIT-IV

VII. (a) Compare linear and binary search methods.

(b) How heap sort is performed? Explain with example. (9+9)

VIII. (a) What is binary search? How is it carried-out?

(b) Compare merge sort and quiet sort methods. (9+9)

UNIT-V

IX. Explain: -

(a) Radix sort

(b) Shell sort

(c) Searching binary trees

(d) Circular linked lists (4×4½)

-*-*-*-