Roll No.....

Total No. of Sections : 03

Total No. of Printed Pages : 03

Code No. : C-293

Annual Examination - 2019

BCA Part - II

BCA-201

THEORETICAL FOUNDATION OF COMPUTER SCIENCE

Paper - III

DATA STRUCTURE

Max.Marks : 50

Time : 3 Hrs. **Min.Marks : 20**

Note : Section 'A', containing 10 very short-answer-type questions, is compulsory. Section 'B' consists of short answer type questions and Section 'C' consists of long answer type questions. Section 'A' has to be solved first.

Section - 'A'

Answer the following very short-answer-type questions in one or two sentences : (1×10=10)

Q.1 What is traversing?

Q.2 Define algorithm?

Q.3 What is record?

Q.4 Give definition of pointer?

Q.5 What do you understand by STACK?

P.T.O.

Q.6 What is linked list?

Q.7 What is meant by AVL?

Q.8 Write any one application of tree.

Q.9 Write complexity of selection sort.

Q.10 What is sorting?

Section - 'B'

Answer the following short-answer-type questions with word limit 150-200 : (3 5=15)

Q.1 What is data structure? Mention the types of data structures with examples.

OR

Explain the various applications of data structure.

Q.2 Sort the following elements using bubble sort.

35, 97, 46, 21, 9, 82

OR

Explain Linear search with help of example.

Q.3 Discuss the application of stack.

OR

Explain traversing of a linked list.

Q.4 Explain deleting in a binary tree.

OR

What are the different types of tree explain.

Q.5 Write an algorithm for merging.

OR

Sort the elements using insertion sort.

70, 30, 50, 80, 40, 10, 20

Section - 'C'

Answer the following long-answer-type questions with word limit 300-350 : (5 5=25)

Q.1 Explain different types of data structure operations.

OR

Differentiate between linear and non-linear data structure.

Q.2 Find element 35 using binary search techinique. The elements are given :

5, 12, 35, 45, 65, 75, 80, 90, 100

OR

Explain pointer array with the help of example.

Q.3 Convert the following infix expression into post-fix and pre-fix

(i) $(a+b*c)/(d-e/f+g)$

(ii)

OR

Explain push and pop operation in a stack.

Q.4 Construct the binary tree for the given number.

25, 45, 35, 15, 18

OR

Explain inorder, preorder and postorder traversal.

Q.5 Explain the algorithm of selection sort with help of example.

OR

Compose merge sort and selection sort.

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