

Roll. No.

S-7015

BCA IInd Semester Examination, 2017
Paper First (BCA-201)
Data Structure

Time : 3 Hrs.]

[M.M. : 70

Note : Attempt any four questions. All questions carry equal marks.

1. (a) What is Data Structure ? Explain its various elementary operations.
(b) What do you understand by algorithm ? Discuss time and space complexity.
2. (a) Write also of matrix multiplication with its complexity.
(b) Compare linear and binary search.
3. (a) Define stack and queue. Give the algorithm of PUSH operation.
(b) Define recursion. Write a program of factorial using recursion.
4. (a) Write an algorithm to delete an element of the singly linked list.
(b) Convert following expression into prefix & postfix :
(i) $A + B * (C * D)$
(ii) $(A + B) * (C + (D ^ E))$
5. (a) Differentiate between the binary tree and complete binary tree.
(b) What is hashing ? Write down the algorithm of Haffman method.
6. (a) What is quick sort ? Sort the following array using quick sort 8, 6, 3, 9, 10, 4, 7, 11.
(b) Compare selection sort & bubble sort with their complexity.
7. Write short notes on any four :
(a) Character string operation
(b) Circular queue
(c) Overflow & underflow
(d) Garbage collection & compaction
(e) Extended binary tree
(f) Binary search tree

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