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B.Tech. (ECE/ETE) (Sem. - 5th)

Data Structures

SUBJECT CODE : BTCS-304 (2011 Batch)

Paper ID : [A2102]

Time : 03 Hours **Maximum Marks : 60**

Instruction to Candidates:

1) Section - A is compulsory consisting of Ten questions carrying Two marks each.
2) Section - B contains Five questions carrying Five marks each and students has to attempt any Four questions.
3) Section - C contains three questions carrying Ten marks each and students has to attempt any Two questions.

Section - A

Q1)

a) What is the use of pointes? Explain pointer arithmetic.

b) What is Big *0* notation? Explain its significance.

c) What are real life applications of stacks?

d) Explain array representation of circular queues.

e) What are various type of traversals that can done on binary trees?

f) Compare the contrast the complexities of quick sort and bubble sort.

g) What does adjacency matrix represent in a graph?

h) What are AVL trees?

i) Explain insertion in an array.

j) Calculate the complexity (worst and average) of linear search.

Section - B

Q2) How are priority queues represented in memory using arrays?

Q3) Explain various operations on header linked list.

Q4) Write an algorithm for insertion sort?

Q5) Write an algorithm to convert infix to postfix using stacks.

Q6) What are threaded trees? Explain various types of threading.

Section - C

Q7) Explain with algorithm and example the breadth first search in graphs.

Q8) Explain various hashing and collision resolution techniques.

Q9) Write an algorithm to reverse a linked list

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