

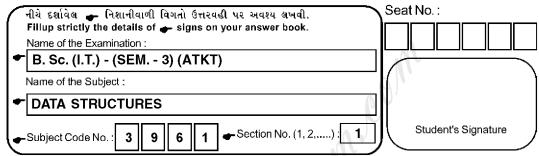
RF-3961-62

B. Sc. (I.T.) (Sem. - III) (ATKT) Examination April/May - 2010 Data Structures

Time: 3 Hours] [Total Marks: 70

RF-3961

Instructions:



- 1 Answer the following questions in brief: (any six)
- 12

3

- (i) What is polish notation?
- (ii) Why circular queue is better than simple queue?
- (iii) What do you mean by **P?
- (iv) What is reverse linked list?
- (v) Explain 3D array.
- (vi) Which data structure the compiler is using in evaluating the expression?
- (vii) Convert (P + Q) / (B C) into prefix.
- 2 (a) Write an algorithm to pop an element from stack.
 - (b) Answer the following questions in detail (any three) 12
 - (i) Explain the tower of Hanoi with respect to stack with an example.
 - (ii) Perform the binary search with proper steps to search 15 2,6,8,15,20,22,30,40,70,100
 - (iii) Explain row major and column major order of array traversal.
 - (iv) What is double ended queue? What are the different types?
- 3 (a) Explain various applications of queue data structure 4 in Computer Science?

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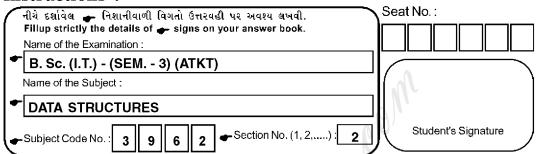
What is the difference between static memory allocation and dynamic memory allocation? Linked list is following which concept?

OR

What is divide and conquer technique? Explain with example.

RF-3962

Instructions:



- 4 Answer the following questions (any three)
 - Write an algorithm for performing inserting at various position in doubly linked list.
 - (ii) Create max-heap tree on following data set 20, 15, 5, 50, 40,12,22,6,9
 - (iii) Perform bubble sort in ascending order: 25,2,4,67,50,15,3,9,17,8
 - (iv) Explain AVL tree.
- 5 (a) Explain root node, height, leaf node, intermediate 4 node of binary tree.
 - What is sequential file organization? (b)

OR

- What is hash file organization? (b)
- 6 Answer the following questions in brief: (any four)

4

15

4

12

- What is priority queue? How to implement priority queue?
- How data is stored in singly linked list with respect (ii) to memory?
- (iii) What is in-order and pre-order tranversal of binary
- (iv) What is Big-oh notation? How to calculate time complexity?
- What is threaded binary tree? (v)

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