

**BACHELOR IN COMPUTER
APPLICATIONS**

Term-End Examination

June, 2011

**CS-62 : 'C' PROGRAMMING AND DATA
STRUCTURE**

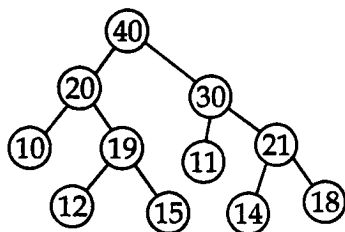
Time : 2 hours

Maximum Marks : 60

Note : Question 1 is Compulsory. Answer any three questions from the rest. All Algorithms should be written nearer to 'C' language.

1. (a) What are Arrays? How are Two-dimensional arrays stored in memory? Write a program to multiply Two 2-dimensional arrays. 8
- (b) Write the algorithm for Binary search. Also apply this algorithm on the following data. 8
22, 44, 11, 88, 33, 55, 77, 66
Show all possible steps.
- (c) Define the following terms using suitable examples. 6
- (i) Degree of Tree
 - (ii) Height of Tree
 - (iii) Internal Node of a Tree
 - (iv) Strongly connected graph
 - (v) Adjacency Matrix

- (d) Write an algorithm to convert any Infix expression to its corresponding Postfix notation. Using this algorithm convert the following expression to postfix : 8
- $$(a + b) / (c - d)$$
2. (a) What is circular Linked List ? Write an algorithm to add a node at the end of a circular linked list. 6
- (b) Write a program in 'C' to add a node to a queue. 4
3. (a) Define Inorder and Postorder traversals of a tree using suitable example. Construct a Binary tree using the following data. 6
- INORDER :- B G D K H A E I C J F
 POSTORDER :- G K H D B E I J F C A
- (b) What is a Heap ? Define its types and properties using suitable examples. 4
4. (a) What is Heapsort ? Apply heapsort on the given data. 5



Show the steps involved.

(b) Write a program in 'C' to count the number of Vowels present in a text file. Display the count of each vowel separately. 5

5. Write short notes on. 10

- (a) Priority Queue
 - (b) Storage Pool
 - (c) Quick Sort
 - (d) Loops in 'C' programming
 - (e) BFS Algorithm.
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